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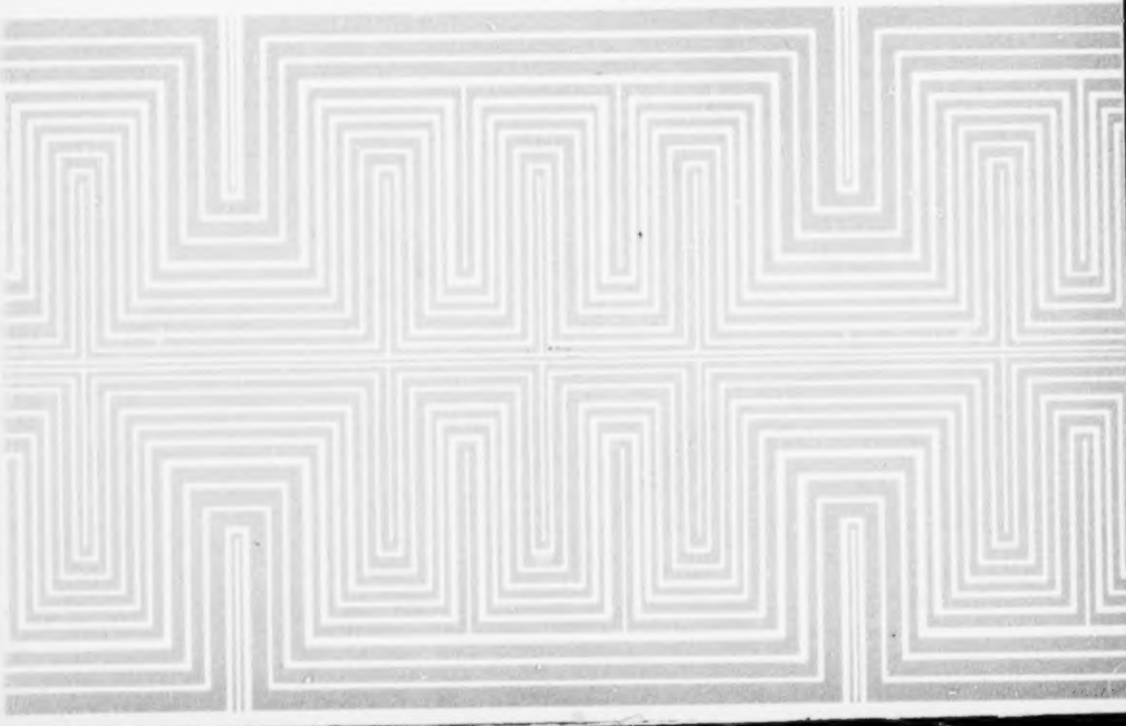
Graduate Medical Education:
Proposals for the eighties



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Introduction

In the past two decades, graduate medical education has become a major activity of medical schools and their associated teaching hospitals. In 1977 over 70 percent of all residents were in graduate programs sponsored by the 323 nonfederal members of the Council of Teaching Hospitals of the Association of American Medical Colleges. According to estimates by the National Resident Matching Program, in 1979–80 more than 95 percent of all residents were in programs having some association with a medical school. In the 1980s over 16,000 students will graduate annually from the 126 medical schools accredited by the Liaison Committee on Medical Education. The vast majority will spend three to seven years as residents in graduate education. Increasingly, the faculties responsible for the undergraduate phase of medical education are responsible for the graduate phase as well.

For these reasons, the Association of American Medical Colleges (AAMC) launched a major effort in 1977 to reappraise the problems and issues confronting graduate medical education. The AAMC Task Force on Graduate Medical Education, appointed to lead this undertaking, identified five areas of special concern that it felt most needed to be studied: the quality of graduate medical education; the transition between undergraduate and graduate medical education; national standards formulation and accreditation; specialty distribution and graduate medical education; and the financing of graduate medical education.

The task force was headed by Jack D. Myers, M.D., University Professor (Medicine) of the University of Pittsburgh School of Medicine. August G. Swanson, M.D., director of the AAMC's Department of Academic Affairs, served as project director. Working groups were named to explore and report on each of the five issues. Chairing these five study groups were the following:

1. Dr. Samuel B. Guze, president of the Medical Center, vice chancellor for medical affairs, and professor and chairman, Department of Psychiatry, Washington University—chairman, Working Group on the Quality of Graduate Medical Education.
2. Dr. D. Kay Clawson, dean, University of Kentucky College of Medicine—chairman, Working Group on the Transition Between Undergraduate and Graduate Medical Education.
3. Dr. Gordon W. Douglas, professor and chairman, Department of Obstetrics and Gynecology, New York University School of Medicine—chairman, Working Group on National Standards Formulation and Accreditation.
4. Dr. Theodore Cooper, dean, Cornell University Medical College and provost for medical affairs, Cornell University—chairman, Working Group on Specialty Distribution and Graduate Medical Education.
5. Dr. Edward J. Stemmler, dean, University of Pennsylvania School of Medicine—chairman, Working Group on the Financing of Graduate Medical Education.

In all, over 70 key individuals involved in graduate medical education were active in the Task Force on Graduate Medical Education and its five working groups.

The task force held its first meeting on June 13 and 14, 1977. In November 1978 it adopted the report of the Working Group on Transition—the first to have been appointed—and by November 29 and 30, 1979, when it last met, the task force had adopted reports of the other four working groups. Over the duration of the project, the task force held nine two-day meetings, and the five working groups met on 13 occasions. During the course of the deliberations, some of the changes recommended in the chapters on transition and on accreditation were evolving or being implemented. Most notable among these was the revision of the policies and practices for the accreditation of graduate medical education, described in Appendix 1.

Throughout the development of the task force's report, communication with others concerned with graduate medical education was encouraged. To facilitate information exchange, observer-participants from the Veterans Administration and from the Graduate Medical Education National Advisory Committee were named to the task force. Additionally, constituents of the AAMC and residents were engaged in forums where the draft reports were examined.

In 1979 the AAMC Executive Council decided to sponsor periodic meetings for residents to gain their perspectives on issues in graduate medical education. From a list of nominees provided by the deans of the medical schools and the Organization of Student Representatives, 32 residents were selected to attend the first conference. The residents reviewed the preliminary draft of the task force's report during that conference, held in October 1979. Their discussion and critique of the document provided useful insights which the task force used.

At the 1979 AAMC Annual Meeting, a representative of each working group presented the major findings and recommendations contained in each chapter to a special Assembly session. The responses from members of the Assembly were largely supportive, although concerns were expressed regarding several issues. One was how the relative autonomy of many major teaching hospitals was to be recognized in defining a medical school and its network of teaching hospitals as an academic medical center. Another was whether the recommendation that academic centers should attempt to adjust the mix of specialists trained in their institutions to meet perceived local, state, regional, or national needs could be accomplished locally by the centers. A third issue was how to resolve the debate over the balance between education and service in graduate medical education programs.

Subsequent to the Assembly discussion, the task force modified the report to deal with concerns that were expressed and presented it to the Executive Council. The Executive Council endorsed the report and decided to disseminate it widely as a working document for discussions by key individuals involved in national graduate medical education policy.

To further stimulate discussions of the report, the Executive Council sponsored an invitational conference on graduate medical education in Washington, D.C., September 29 and 30, 1980. Conference participants were drawn from the medical specialty boards, residency review committees, medical specialty colleges, academics and professorial societies, the Coordinating Council on Medical Education, and the Liaison Committee on Graduate Medical Education. Fifteen private organizations concerned broadly with these issues sent delegates. Those attending the conference are listed in Appendix 14.

Written reactions to the document distributed for discussion at the conference were invited. Commentaries and critiques received were published in the conference agenda and distributed to participants prior to the conference. During the first day of the conference, 30 small group discussions were conducted to permit every voice to be heard. The second day was devoted to a plenary session where summaries of the small group sessions were presented and discussed.

Graduate Medical Education: Proposals for the Eighties, the work that follows, presents the views and recommendations of the AAMC Task Force on Graduate Medical Education and its five working groups. Throughout the chapters, their recommendations appear in italics. The order in which the recommendations fall in no way relates to the order of their importance. Observations and conclusions articulated by those who participated in the AAMC Conference on Graduate Medical Education are included. Editorial changes have been incorporated without note. More extensive offerings appear in parentheses within the text, as new or modified recommendations, or as discrete sections at the end of the chapter.

Implementing the recommendations and achieving the goals set forth in this report will require a commitment from the constituent institutions and organizations that comprise the Association of American Medical Colleges to become actively involved in the continued development and improvement of graduate medical education in the United States. This commitment must be focused on ensuring that residents have the best possible opportunity to achieve the knowledge and skills required to become excellent physicians. Accomplishing this will require a willingness to accommodate their educational needs and to adapt to new relationships and new policies. The AAMC invites the participation of all who are concerned with advancing graduate medical education to join in this enterprise.

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Chapter 1

The Evolution of Graduate Medical Education In the United States

Graduate medical education is the phase of formal medical education that begins at graduation from medical school and ends after the educational requirements for one of the medical specialty certifying boards have been completed. The length of graduate medical education varies from three to seven years. The term "residency" is commonly used to describe the period of graduate medical education, and the term "resident physician" or, more simply, "resident" to identify the physician engaged in such education. The term "resident" derives from the era when physicians being educated and trained for a specialty were expected to reside in the hospital, essentially on a full-time basis. Although few residents now reside full time in teaching hospitals, the name distinguishes this unique group of physicians and is used throughout this report.

As an additional point of clarification, the license to practice medicine is vested in the states. Once licensed, physicians—without specialty training and/or board certification—can limit their practices to specified areas of medicine and thereby become self-designated "specialists." Increasingly, local requirements preclude these kinds of practice arrangements. The term "specialist," used throughout this report, describes individuals who have acquired requisite education in their respective areas of medicine, most of whom have been certified by specialty boards in their chosen areas of study.

Traditionally, graduate medical education has been based in hospitals. During the first quarter of this century, it was common for recent graduates of medical schools to spend a year of "internship" in a hospital to gain practical experience. Some spent the year in hospitals affiliated with, or owned by, medical schools, but for most the internship year was in a hospital not related to any medical school. As residencies were developed for physicians seeking to gain knowledge and skills in a specialty, they, too, were usually based in hospitals that had only tangential relationships with medical schools. Although university-based medical schools were urged to become the major providers of graduate medical education, the development of autonomous, national specialty boards that certified specialists on the basis of their hospital education and national examinations virtually eliminated a role for academic degree programs in medical specialty certification. The hospital remains the principal location of graduate medical education, although in the course of completing a program, residents may be assigned to clinics or ambulatory centers not associated with hospitals and to educational or research facilities in other institutions.

Graduate medical education has grown enormously since World War II, when only a small fraction of physicians had formal education beyond the internship. In 1940, 587 hospitals had a total of 5,118 residency positions (1); in 1976, 1,702 hospitals had a total of 65,046 positions for residents (2). In 1979, 93 percent of the graduating seniors responding to an Association of American Medical Colleges-sponsored survey reported an intent to continue in graduate medical education until they had fulfilled the requirements of a certifying board. The provision of quality graduate medical education, using available resources effectively, is a major concern of the academic medical community and the agencies that provide financial support for residents and faculty.

Medical schools were not much involved in graduate medical education during its initial development in the United States. However, during the past 20 years, graduate medical education has become a major activity of these institutions and their associated teaching hospitals. In 1977, 71 percent of all residents were in residency programs sponsored by the 323 nonfederal members of the Council of Teaching Hospitals of the Association of American Medical Colleges (3). These teaching hospitals, which are owned by, operated by, or affiliated with medical schools, have graduate medical education faculties that are frequently the same as the academic faculty of the medical school. If this formal relationship does not exist, there is a significant identity of the hospital teaching staff with a medical school faculty. In addition to the involvement of members of the Council of Teaching Hospitals, most other teaching hospitals also have medical school affiliations. According to estimates by the National Resident Matching Program, in 1979–80 more than 95 percent of all residents were in programs having some association with a medical school.

This development of consortia of medical schools and teaching hospitals into constellations of institutions dedicated to both undergraduate and graduate medical education has led to the term "academic medical center." A center often includes other professional and allied health schools, biomedical research institutions, ambulatory care centers, rehabilitation institutes, and health maintenance organizations. The term does not necessarily describe a single corporate entity with common management and governance. In some academic medical centers, the chief executive officer of one or more teaching hospitals reports to the dean of the medical school or to a university vice president for health affairs, and all members of the medical staff are members of the medical school faculty. In other academic centers, no teaching hospital executive reports directly to a medical school or university official, although the medical school faculty may have the privilege of appointing or approving the appointment of key clinical staff positions in the hospitals. There are numerous variations between these extremes. While "academic medical center" does not imply a corporate entity, the term does describe a relationship among institutions with an educational mission in common and is illustrative of the fact that teaching hospitals and medical schools recognize graduate medical education as an essential phase in the preparation of physicians that cannot be separated from the mainstream of academic medicine. In the future, it is likely that medical schools and teaching hospitals will develop more common approaches to fulfilling their institutional responsibilities for this important phase in the preparation of physicians.

Influences on GME

The specialty certifying boards have a significant influence on the scope of graduate medical education. The boards establish the educational criteria that residents must attain if they are to be eligible for consideration for certification. This means that each board establishes the minimum length of time for education and training in a specialty and to a significant degree determines the content. Although the boards are independent and autonomous, they have exchanged information through the Advisory Board for Medical Specialties since 1933. In 1970, the advisory board became the American Board of Medical Specialties, expanded its functions, and developed a full-time staff. While the boards rigorously have preserved their individual autonomy, there now is greater consultation among them about changes in their certification requirements and their approaches to the examination of candidates. The power of the boards to shape graduate medical education has generally been used responsibly to achieve high standards for specialty practice. It is imperative that the boards continue to work together and with the academic community to improve the quality and effectiveness of graduate medical education.

Professional specialty societies have a strong influence on graduate medical education. These societies range from small associations of program directors in graduate medical education and medical school department chairmen to large specialty colleges and academies. The Council of Academic Societies of the Association of American Medical Colleges has 55 clinical specialty organization members with a significant interest in graduate medical education. The Council of Medical Specialty Societies now has 24 major specialty colleges and academies as members. Each of these has a close relationship with its corresponding specialty board, and several are directly involved in the approval of the requirements for educational programs in their specialty as one of the sponsors of a residency review committee. Both the Council of Academic Societies and the Council of Medical Specialty Societies provide forums for the discussion and resolution of issues in graduate medical education. The Council of Academic Societies, through its interaction with the Association of American Medical Colleges' Council of Deans and Council of Teaching Hospitals, brings the ideas and concerns of program directors and faculty for graduate medical education to the attention of medical school deans and teaching hospital executives. The Council of Medical Specialty Societies provides an opportunity for academicians and practicing specialists to express and resolve their concerns and communicate them to the specialty boards, the academic community, and the teaching hospitals.

The American Medical Association (AMA) has contributed to the development of graduate medical education. Through its early establishment of standards for internships and residencies and its development of procedures to review and approve hospitals and programs, the American Medical Association, working with the boards and specialty organizations, facilitated the evolution of a national system to ensure the quality of graduate medical education. The report of the AMA's Citizens Commission on Graduate Medical Education in the mid-1960s provided an impetus to begin the restructuring and improvement of graduate medical education (4). Recommendations from that commission continue to shape concepts about graduate medical education at both national and local levels.

Changes in Accreditation

Greater involvement of the certifying boards, the specialty societies, the medical schools, and the teaching hospitals in graduate medical educational issues and policies at the national level was facilitated by the establishment of the Liaison Committee on Graduate Medical Education in 1972. The Liaison Committee on Graduate Medical Education is sponsored by the Association of American Medical Colleges, the American Board of Medical Specialties, the American Hospital Association, the American Medical Association, and the Council of Medical Specialty Societies. It is responsible for the accreditation of graduate medical educational programs. Prior to its formation, the review and approval of graduate programs was the responsibility of the Council on Medical Education of the American Medical Association. In the early 1950s, the council established residency review committees in cooperation with the specialty boards and some specialty colleges. These committees recommended the minimum requirements for approval of programs and reviewed them to determine if they met the requirements. Approved programs were listed in a directory published by the American Medical Association. The Liaison Committee on Graduate Medical Education has provided a broader perspective on policy issues and has made significant progress toward improving the accreditation process and ensuring more consistent quality of graduate programs across the nation. Effective 1981 the Liaison Committee on Graduate Medical Education was reorganized and renamed the Accreditation Council for Graduate Medical Education. This development is discussed in Appendix 1.

An Essential Phase

Graduating medical students today face an imposing array of career options and choices. The decision for their first graduate year is the first step in shaping their careers. For most, the decision will determine which specialty they will ultimately practice. Their opportunities to learn and progressively assume appropriate responsibility for the care of patients depend upon the resources of their institutions and the abilities and educational commitment of their faculty. The characteristics of the hospitals and programs they enter will determine to what degree they will pursue scholarly inquiry and make academic contributions. Residents' opportunities and responsibilities to be teachers and scholars, as well as learners, depend upon their institutional environment. Graduate medical education has become far more than a period of practical experience before entering independent practice. It is a major determinant of physicians' careers and the quality of medical practice in the United States.

In the 1980s, over 16,000 students will graduate annually from the 126 medical schools accredited by the Liaison Committee on Medical Education. The vast majority will spend three to seven years as residents in graduate education. Because the residency period shapes careers and determines the number and types of specialists who will enter medical practice, it has come under increasing scrutiny. Public and private agencies concerned with the medical services now available, and the services to be provided in the future, view the manipulation of graduate medical education as an expedient approach to doing something about changing medical practice. Certainly the availability of opportunities for graduate medical education in any specialty will determine the number of physicians educated and trained as proficient practitioners of the specialty. However, modifying the number of well prepared specialists in any discipline will not change medical practice unless reimbursement policies and practice privileges are also reshaped. Advances in biomedical knowledge and their application to clinical medicine can be expected to continue. The effective adaptation of the practice of medicine to its increasing complexity cannot be accomplished simply by manipulating graduate medical education and the institutions that provide it.

Long-term policies for the stable financing of graduate medical education are needed. Their development will require understanding and agreement between the providers of graduate medical education and those responsible for its financial support. Because graduate medical education is financed largely by revenues generated through reimbursements to teaching hospitals from the public and private agencies responsible for paying for medical care, it is essential that these agencies, medical schools, clinical faculties, and teaching hospitals reach an accord regarding the purpose of graduate medical education and policies to provide stable funding.

The foregoing suggest that graduate medical education has become as important as undergraduate medical education in the preparation of physicians. It has evolved from a short period of practical experience in a hospital into a formalized, structured educational program, the completion of which is necessary for physicians to be capable of practicing medicine at a level consistent with current knowledge and technology and anticipated developments. While still based primarily in hospitals, graduate medical education is now a major concern of the medical schools. It shapes the careers of medical school graduates and determines the spectrum of qualified specialists that will be available. The evolution of graduate medical education from 1844, when the first medical specialty society was founded, until 1981 is chronicled in Exhibit 1.

EXHIBIT 1

Chronology of Events in the History of Graduate Medical Education, 1844–1981

1844	Founding of American Psychiatric Association.
1847	Founding of American Medical Association.
1864	Founding of American Ophthalmological Society.
1867	Founding of American Otological Society.
1875	Founding of American Neurological Association.
1876	Founding of American Gynecological Society.
	Founding of American Dermatological Association.
	Founding of Association of American Medical Colleges by representatives of 22 medical schools. Its purpose was to raise the standards of medical education. Initial recommendations from the Association of American Medical Colleges included that medical schools offer three courses of lectures and that no candidate be graduated until examined in all branches of medicine.
1879	Founding of American Laryngological Association.
1880	Founding of American Surgical Association.
1887	Founding of American Orthopaedic Association.
1888	Founding of American Pediatric Society.
1896	Founding of American Academy of Ophthalmology and Otolaryngology.
1898	Founding of American Hospital Association.
1899	Founding of American Society of Colon and Rectal Surgery.
	Founding of Western Ophthalmic and Otolaryngological Association, which in 1903 became the American Academy of Ophthalmology and Otolaryngology.
1902	Founding of American Urological Association.
1904	Formation of Council on Medical Education of the American Medical Association to report on medical education to the House of Delegates, make suggestions for improvement, and act as the American Medical Association's agent in its effort to raise standards.
1910	*Medical Education in the United States and Canada*, by Abraham Flexner, was published by the Carnegie Foundation for the Advancement of Teaching. The report, a detailed survey of medical

EXHIBIT 1 (Continued)

schools, demonstrated the urgent requirement for stringent raising of standards of admission and instruction.

1912 Founding of Federation of State Medical Boards.

First survey of internships by the Council on Medical Education of the American Medical Association.

1913 Founding of American College of Surgeons. The major issues driving the formation of the college were the need to establish criteria for recognition of the qualified surgeon, stipulation of standards for training surgeons, and corollary concern with abolishing the practice of fee-splitting. One of the first activities of the college was the Hospital Standardization Program, which later developed into the Joint Commission on Accreditation of Hospitals.

1914 First list of hospitals with approved internships published by the Council on Medical Education of the American Medical Association.

1915 Founding of National Board of Medical Examiners, a voluntary examining board, as an alternative to legal control of state medical licensure. A major issue involved in the formation of the national board was the necessity for some method to provide reciprocity for medical licensing procedures.

Founding of American College of Physicians. The early focus of the college was the physiological and chemical bases of disease—biological medicine. Practitioners of internal medicine who had a scientific orientation considered themselves to be specialists.

1917 The American Board of Ophthalmic Examinations was formally incorporated by the American Ophthalmological Society, the Academy of Ophthalmology and Otolaryngology, and the Section on Ophthalmology of the American Medical Association. In 1933, it was renamed the American Board of Ophthalmology. The formation of the board was the first joint action of the specialist organizations.

1919 The *Essentials of an Approved Internship* was first published. The *Essentials* represented standards set for internships by the Council on Medical Education of the American Medical Association.

1920 The Council on Medical Education of the American Medical Association created 15 committees to recommend preparation essential for expertness in each of the specialties. As a result of these committee reports, *Principles Regarding Graduate Medical Education*, listing the minimum requirements for the education of physicians in these specialties, was published in 1923. By 1928, the *Principles* had become the *Essentials of Approved Residencies and Fellowships*.

The Graduate Committee Report of the Council on Medical Education of the American Medical Association was published. Among its findings was a recommendation that graduate medical training be provided in programs with strong university ties and the granting of graduate degrees for specialty education.

1921 The United States Veterans Bureau was established with most veterans' programs, including medical care, transferred to the bureau. In 1930 the few remaining functions pertaining to veterans were consolidated into the bureau, and it was renamed the Veterans Administration.

During this time, the technology available to medicine was increased largely as a result of World War I. The cost of medicine was becoming an issue and led to the development of insurance programs. Assessment of physicians entering the military during the war led to further concern over the quality of physician training, and increasing specialization was mandating a more organized health care delivery system. The relative balance of generalism and specialism was being questioned.

1923 Founding of American College of Radiology.

1924 Five specialty societies representing otolaryngology established the National Board of Examiners in Otolaryngology.

1927 First listing of residency training programs was published by the American Medical Association.

1928 The House of Delegates of the American Medical Association approved the *Essentials of Approved Residencies and Fellowships*.

1930 Founding of American Board of Obstetrics and Gynecology.

Founding of American Academy of Pediatrics.

EXHIBIT 1 (Continued)

The Ransdell Act established the National Institute of Health. It provided funds for the construction of a laboratory and for a stable and continuing program of research fellowships.

1931 Founding of American Society of Plastic and Reconstructive Surgeons.

Founding of American Society of Anesthesiologists.

1932 Founding of American Board of Dermatology and Syphilology.

The Commission on Medical Education of the Association of American Medical Colleges (primarily concerned with undergraduate education) and the Committee on the Costs of Medical Care (a national committee charged with the evaluation of the organization and the availability of scientific medicine) recommended development of standards and formal recognition for medical specialists.

1933 The Advisory Board for Medical Specialties was formed by the Boards of Otolaryngology, Dermatology, Ophthalmology, and Obstetrics and Gynecology and by the Association of American Medical Colleges, the National Board of Medical Examiners, the Federation of State Medical Boards, and the American Hospital Association. The advisory board was an outgrowth of the rapid development of specialty boards; its purpose was to advise organizations concerning the coordination of the education and certification of medical specialists.

Founding of American Board of Pediatrics.

Founding of American Academy of Orthopaedic Surgeons.

1934 Founding of American Board of Orthopaedic Surgery.

Founding of American Board of Radiology.

Founding of American Board of Psychiatry and Neurology.

1935 Founding of American Board of Urology.

The Social Security Act (P.L. 74-241) was legislated. For the first time, this law provided grants-in-aid to states for public health activities such as maternal and child care and to crippled children, the blind, and the aged.

1936 Founding of American Board of Internal Medicine.

Founding of American Board of Pathology.

1937 Founding of American Board of Surgery. At the same time, the American Board of Anesthesiology and the American Board of Plastic Surgery were formed as affiliates of the American Board of Surgery. Both anesthesiology and plastic surgery developed independent certifying boards in 1941.

The American College of Surgeons began a program to set standards for surgical education.

1938 Founding of American Academy of Dermatology.

Founding of American Academy of Physical Medicine and Rehabilitation.

Formation of Advisory Council on Medical Education, Licensure, and Hospitals. The council was organized by Dr. Willard C. Rappleye and was to be a coordinated council of the various organizations concerned with medical education. Organizations invited to join the advisory council were the Association of American Medical Colleges, the American Medical Association, the American Hospital Association, the Federation of State Medical Boards, the Advisory Board for Medical Specialties, the National Board of Medical Examiners, the American College of Surgeons, the American College of Physicians, the Association of American Universities, the American Public Health Association, and the American Association for the Advancement of Science. In 1939 the House of Delegates of the American Medical Association "disapproved a recommendation that the Council on Medical Education and Hospitals be authorized to send three representatives to act on the Advisory Council on Medical Education and Hospitals." The advisory council dissolved in 1944.

1939 First list of hospitals approved for graduate surgical education published by the American College of Surgeons. At the same time, the "Fundamental Requirements for Graduate Training in Surgery" was published.

The first syllabus for graduate training published by the American Board of Dermatology.

EXHIBIT 1 (Continued)

1940 Founding of American Board of Neurosurgery.

The Council on Medical Education of the American Medical Association was developing cooperative arrangements with 10 of the certifying boards for reviewing residency programs. A joint conference committee in internal medicine (Council on Medical Education, American College of Physicians, and the American Board of Internal Medicine) held its first organizational meeting. These efforts were interrupted by World War II.

The Directory of Medical Specialists was published for the first time by the Advisory Board for Medical Specialties.

The Report of the Commission on Graduate Medical Education, *Graduate Medical Education*, was published. The commission, chaired by Dr. Willard C. Rappleye, recommended the residency as the most satisfactory form of specialty training organized as an educational experience and a joint responsibility of universities and hospitals. The report encouraged a general internship in a hospital with an educational structure, preferably related to a medical school. The internship was to serve either as the first year of specialty training or preparation for general practice.

The National Defense Research Committee was created by President Franklin D. Roosevelt. In 1941 it became a part of the Office of Scientific Research and Development. The military, confronted with an increasing number of medical problems, turned to civilian laboratories for assistance. Federally funded research in the sciences during the war embraced many fields of medicine, and provided the impetus for both a growth in knowledge in biomedical disciplines and their application to medical problems.

1942 Formation of the Liaison Committee on Medical Education by the Association of American Medical Colleges and the American Medical Association to accredit medical schools.

1943 Founding of American Academy of Allergy.

1944 P.L. 346, the Serviceman's Readjustment Act (GI Bill), was passed. The GI Bill offered World War II veterans benefits providing them tuition and living allowances for both undergraduate and graduate medical education. Returning physicians were offered subsidized residency training; hospitals were able to claim a subsidy for training residents. The benefits of the GI Bill reinforced a rapid shift toward specialty training.

1946 P.L. 293 was enacted by Congress and created the Department of Medicine and Surgery within the Veterans Administration. P.L. 293 gave the Veterans Administration authority to establish residencies in teaching hospitals associated with medical schools and mandated the Department of Medicine and Surgery to evaluate the quality of care in Veterans Administration hospitals.

1947 Founding of American Academy of General Practice.

Founding of College of American Pathologists.

1948 Founding of American College of Obstetricians and Gynecologists.

The Liaison Committee for Specialty Boards was formed with equal representation from the Advisory Board for Medical Specialties and the American Medical Association. Its purpose was to make recommendations for recognition of new specialty boards. The Liaison Committee for Specialty Boards developed and approved the *Essentials for Approval of Examining Boards in Medical Specialties*.

A proposal to establish a rationing system for house staff on the basis of a hospital's annual admissions was rejected by the Council on Medical Education. Developments that led to the proposal of a rationing plan included a rapid growth in the number of internships and residencies created to accommodate the wartime students and veterans with GI benefits returning after World War II. The house staff had become an essential part of hospital staffing patterns; interns and residents provided 24-hour, on-call service and performed the growing battery of preliminary diagnostic tests. No controls were established over the burgeoning number of graduate training positions offered. Instead, as a result of the need to regulate competition among hospitals and introduce some order into the selection process, a national plan for internship matching was initiated.

1949 The Joint Educational Committee in Internal Medicine was reactivated. The participants included the Council on Medical Education of the American Medical Association, the American College of

EXHIBIT 1 (Continued)

Physicians, and the American Board of Internal Medicine. In 1953 the committee was renamed the Residency Review Committee for Internal Medicine.

1950 The Joint Conference Committee on Graduate Training in Surgery was formed with equal representation from the American Board of Surgery, the American College of Surgeons, and the Council on Medical Education of the American Medical Association. The review committees for internal medicine and surgery were empowered to act in approving residency programs on behalf of their constituent organizations and became the model for accrediting graduate educational programs for all specialties.

The passage of the Omnibus Medical Research Act gave the surgeon general authority to establish new disease-oriented institutes, and became the instrument of choice for federal support of biomedical sciences.

1951 The Joint Commission on Accreditation of Hospitals was formed as a successor to the hospital standardization program initiated by the American College of Surgeons. Its current sponsors are the American College of Physicians, the American College of Surgeons, the American Hospital Association, and the American Medical Association.

The National Intern Matching Program was formed under the guidance of the American Medical Association, the Association of American Medical Colleges, the American Hospital Association, and student representatives. In 1978 it was renamed the National Resident Matching Program. Its current sponsors are the Association of American Medical Colleges, the American Medical Association, the American Protestant and Catholic Hospital Associations, the American Hospital Association, the Council of Medical Specialty Societies, the American Board of Medical Specialties, and the American Medical Student Association.

1952 A proposal was introduced to the Council on Medical Education of the American Medical Association that committees (such as for internal medicine and surgery) be developed in cooperation with the certifying boards so that they could act for both groups in approval of hospitals for residency training. By 1953 five specialty boards—Orthopaedic Surgery, Otolaryngology, Pediatrics, Proctology, and Radiology—had expressed interest in establishing residency review committees.

1953 The report by Drs. John E. Deitrich and Robert C. Berson, *Medical Schools in the United States at Mid-Century*, was published by the Association of American Medical Colleges. The result of an Association of American Medical Colleges-sponsored survey, the report dealt with the rapid development of the sciences and their application to diagnosis and treatment, changes that had altered the character of the medical schools.

1954 Founding of American College of Preventive Medicine.

Founding of Society of Nuclear Medicine.

Formation of the Internship Review Committee by the Academy of General Practice, the American Hospital Association, the American Medical Association, the Association of American Medical Colleges, and the Federation of State Medical Boards. On the basis of the *Essentials of an Approved Internship*, the Internship Review Committee reviewed and accredited programs in the same fashion as the developing residency review committees.

1955 *Medical Research Activities of the Department of Health, Education, and Welfare* (the Long Report), a report by the Special Committee on Medical Research of the National Science Foundation, was published. The report found the growth of medical research salutary and recommended its further expansion.

1957 The Educational Council for Foreign Medical Graduates was created by the American Medical Association, the Association of American Medical Colleges, the Federation of State Medical Boards, and the American Hospital Association. Its purpose was to sponsor an examination that would assess the knowledge of foreign medical graduates and to provide a certificate to interns and residents from foreign medical schools that would allow them to enter U.S. training programs and assume patient care responsibilities.

1958 The Bayne-Jones Report, *The Advancement of Medical Research and Education*, was prepared by the Secretary's Consultants on Medical Research and Education and published by the Department of

EXHIBIT 1 (Continued)

Health, Education, and Welfare. The report called for an increased output of physicians and suggested the creation of from 14 to 20 new medical schools by 1970.

1959 The *Final Report on Preparation for Family Practice* was published. The report was the product of a joint committee of representatives from the Association of American Medical Colleges, the American Medical Association, and the American Academy of General Practice. The report recommended two-year hospital programs consisting largely of internal medicine and pediatric training—in effect, a two-year mixed internship.

The Report of the Surgeon General's Consultant Group on Medical Education, *Physicians for a Growing America* (the Bane Report), was published. The Report recommended that the number of physicians graduated from schools of medicine and osteopathy be increased and that a federal program of student aid be enacted. The Bane Report set a national goal for 1975 of 330,000 physicians.

1960 The Report of the Committee of Consultants on Medical Research, *Federal Support of Medical Research* (the Boisfeuillet Jones Report), was published by the Subcommittee on the Departments of Labor and Health, Education, and Welfare of the Senate Appropriations Committee. The report called for more research and research training funds and recommended federal support of medical schools and medical education.

1963 The first bill to aid medical education, P.L. 88-129, the Health Professions Educational Assistance Act, was signed into law by President John F. Kennedy. Its purpose was to expand enrollment in medical schools, dental schools, and other health education institutions; it provided matching grants for construction and expansion of health professional schools and loans for students in medicine, osteopathy, and dentistry.

1964 Founding of Society of Thoracic Surgeons.

The Ad Hoc Committee on Education for Family Practice (Willard Committee) was established by the American Medical Association. The Committee Report, *Meeting the Challenge of Family Practice*, endorsed board certification for family practitioners and development of new programs for the education of family physicians.

1965 The Coggeshall Report, *Planning for Progress Through Medical Education*, was published by the Association of American Medical Colleges. The document, written by Dr. Lowell T. Coggeshall, recommended broader and enlarged responsibility for the Association of American Medical Colleges and a wider social and educational role by individual medical schools, encompassing not only undergraduate but also graduate and continuing medical education. Providing leadership in the development of improved approaches to family practice and increased interaction with the federal government were also suggested goals for the Association.

P.L. 89-97, Social Security Amendments of 1965. The law established a Social Security hospital insurance program for the aged and a voluntary supplementary medical insurance program (Medicare) and grants to states for medical assistance programs (Medicaid).

P.L. 89-290, Health Professions Educational Assistance Amendments of 1965. These amendments continued emphasis on expansion of enrollment through construction grants; they initiated provisions for basic and special improvement grants for improving curriculum. The legislation also introduced loan forgiveness for graduates who practiced in physician shortage areas.

The Tri-College Council was established by the American College of Obstetricians and Gynecologists, the American College of Physicians, and the American College of Surgeons. The name of the organization was later changed to the Council of Medical Specialty Societies.

1966 *The Graduate Education of Physicians* (the Report of the Citizens Commission on Graduate Medical Education) was published. The commission, chaired by Dr. John S. Millis and sponsored by the American Medical Association, recommended that the internship be abandoned and that the internship and residency be combined into a single period of graduate medical education called a residency and planned as a unified whole. Other recommendations were that a "Commission on Graduate Medical Education" be established to plan, coordinate, and review standards for graduate medical education and that graduate programs for primary physicians be developed.

EXHIBIT 1 (Continued)

1967 *The Report of the National Advisory Commission on Health Manpower* was published. President Lyndon B. Johnson established the advisory commission to develop recommendations for action by government or by private institutions for improving availability and utilization of health manpower. Recommendations of the report included one that the production of physicians be increased beyond current levels by a substantial expansion in existing medical schools and by continued development of new schools.

The Council of Medical Specialty Societies was incorporated by the membership of the Tri-College Council with the purpose of promoting communication and joint action by the large specialty colleges, academies, and associations representing practicing specialists in the United States. The Council of Medical Specialty Societies currently represents the 24 major medical specialty organizations.

1968 The Council of Academic Societies of the Association of American Medical Colleges sponsored a national conference on the role of the university in graduate medical education. The AAMC approved the concept that the academic medical center should assume the responsibility for graduate medical education. The publication, *The Role of the University in Graduate Medical Education*, was developed from this conference.

P.L. 90-490, the Health Manpower Act. The law continued emphasis on expansion of medical school enrollment; it gave priority to assisting medical schools in financial distress; special improvement grants were renamed special project grants.

1969 Founding of American Board of Family Practice.

1970 The Advisory Board for Medical Specialties was renamed the American Board of Medical Specialties.

P.L. 91-519, the Health Training Improvement Act. The legislation enacted emergency assistance to medical schools in financial distress.

P.L. 91-623, the Emergency Health Personnel Act. The National Health Service Corps was created to provide health professionals for health manpower shortage areas.

1971 P.L. 92-157, the Comprehensive Health Manpower Training Act. The act authorized a program of capitation grants; medical schools were required to expand enrollment, conduct specified programs (such as interdisciplinary health professions training), or expand enrollment of disadvantaged students. It continued financial aid to new medical schools and added grants for graduate training in family medicine.

1972 The Liaison Committee on Graduate Medical Education was formed by the American Medical Association, the Association of American Medical Colleges, the American Board of Medical Specialties, the Council of Medical Specialty Societies, and the American Hospital Association. It was charged with the accreditation of graduate medical education. The Coordinating Council on Medical Education was also formed by the same organizations. The Coordinating Council was to consider policy matters for both undergraduate and graduate medical education for referral to parent organizations. It was also expected that the Coordinating Council would develop a Liaison Committee on Continuing Medical Education.

P.L. 92-541, the Veterans Administration and Health Manpower Training Act. This law authorized the Veterans Administration to assist in establishing eight state-supported medical schools and to provide grant support to existing medical schools.

1973 *Evaluation in the Continuum of Medical Education* (the Report of the Committee on Goals and Priorities of the National Board of Medical Examiners, chaired by Dr. William D. Mayer) was published. The GAP Report, as it became known, advised that the national board abandon its traditional three-part examination for certification and, instead, develop a single exam to be given at the interface between undergraduate and graduate medical education. The exam was to certify graduating medical students for limited licensure to practice in a supervised setting. The committee also recommended that the national board expand its role in the evaluation of students in residency training, and, further, that full licensure as an independent practitioner be based on the certifying examination for a specialty.

1975 The Liaison Committee on Graduate Medical Education began to accredit residency training programs.

EXHIBIT 1 (Continued)

The Report of the Coordinating Council on Medical Education, *Physician Manpower and Distribution: The Primary Care Physician*, was published. The report recommended that institutions responsible for graduate medical education, including university hospitals, should be encouraged to establish residencies in family practice, internal medicine, and pediatrics with orientation toward primary care. It further recommended that the American Boards of Internal Medicine and Pediatrics redefine their certifying requirements so that educational programs and careers of internists and pediatricians have the same professional prestige as those in subspecialty categories.

A joint study by the American College of Surgeons and the American Surgical Association, *Surgery in the United States: A Summary Report of the Study of the Surgical Services for the United States*, was published. The study, the most extensive study of physician manpower and distribution produced among the surveys by large specialty organizations at this time, suggested that the number of residents completing their training in all surgical specialties was in excess of the number required and recommended that the number of surgical residency positions be controlled.

1976 The Graduate Medical Education National Advisory Committee was chartered, charged to take national leadership in developing programs addressed to graduate medical education; in the research, development, and analysis of programs that impact on the health manpower needs of the nation; and for making recommendations on overall strategies for future supply and requirements of physicians by specialty and geographic location.

The Institute of Medicine of the National Academy of Sciences published the final report of the Social Security Studies, *Medicare–Medicaid Reimbursement Policies*. The report was concerned principally with determining appropriate and equitable methods by which Medicare and Medicaid can pay for physician services in teaching hospitals. The report also contained recommendations regarding specialty and geographic distribution of physicians, including more equitable support for ambulatory care services, direct support to medical schools and teaching hospitals for primary care training, a reduction in the number of trainees in the non-primary care specialties, and elimination of existing incentives for foreign physician immigration into the United States.

The report of the Coordinating Council on Medical Education, *Physician Manpower and Distribution: The Role of the Foreign Medical Graduate*, was published. The report made a series of recommendations regarding policies affecting the entrance of foreign medical graduates into the United States, their education and training in appropriate institutions, and their effective utilization in the U.S. health care system. The report suggests that U.S. medical schools graduate enough physicians to meet the country's health requirements.

P.L. 94-484, the Health Professions Educational Assistance Act of 1976. The capitation grant program was extended; however, medical schools were required to have a specified percentage of filled first-year positions in primary care residencies and required to increase third-year medical student class size to accommodate U.S. citizens enrolled in foreign medical schools. Construction grants were expanded for ambulatory care and primary care teaching facilities. Primary care training grants were expanded to include programs in general internal medicine and general pediatrics. Restrictions were placed on the entry of alien physicians who were graduates of foreign medical schools into U.S. residency training programs.

P.L. 94-368, Medicare Extension Amendments. The legislation delayed effective dates of some Medicare provisions, including Section 227, relating to reimbursement of teaching physicians.

Subsequent to a petition by the residents at Cedars-Sinai Medical Center in Los Angeles for recognition of a collective bargaining unit under the provisions of the National Labor Relations Act, the National Labor Relations Board ruled that residents were principally students and, therefore, not eligible for collective bargaining under the National Labor Relations Act.

1977 The Liaison Committee on Continuing Medical Education was formed by the American Medical Association, the Association of American Medical Colleges, the Council of Medical Specialty Societies, the American Board of Medical Specialties, and the American Hospital Association.

The Association of American Medical Colleges established the Task Force on Graduate Medical Education to review the major problems and issues facing graduate medical education and to recommend changes in this phase of the preparation of physicians.

EXHIBIT 1 (Continued)

1978 Publication of the General Accounting Office Report to the Congress of the United States, *Are Enough Physicians of the Right Types Trained in the United States?* The report discusses the supply of physicians in the United States, graduate medical education programs, and the roles of the medical profession, the states, and federal agencies in training appropriate numbers and types of physicians. The single recommendation of the report was that the Secretary of Health, Education, and Welfare request the Coordinating Council on Medical Education to enter a contract to develop and implement a system that would ensure training of an optimal number and mix of specialists.

1979 The American Medical Association withdrew from the Liaison Committee on Continuing Medical Education.

The American Board of Medical Specialties recognized the American Board of Emergency Medicine as a conjoint specialty board consisting of representatives from the American Boards of Surgery, Internal Medicine, Family Practice, Psychiatry and Neurology, Obstetrics and Gynecology, Pediatrics, and Otolaryngology; the American College of Emergency Physicians; the University Association for Emergency Medicine; and the Section on Emergency Medicine of the American Medical Association.

H.R. 2222 was defeated. H.R. 2222 would have designated residents as employees and given them the opportunity for collective bargaining under the National Labor Relations Act.

1981 The Liaison Committee on Graduate Medical Education was reorganized and transformed into the Accreditation Council for Graduate Medical Education under the auspices of the same sponsoring organizations. The Coordinating Council on Medical Education was abolished and replaced by the Council for Medical Affairs.

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Chapter 2

The Quality of Graduate Medical Education

Graduate medical education in the United States is generally recognized and accepted as an essential phase of medical education. Nearly all senior medical students spend three or more years in graduate education before they enter practice (5). The Liaison Committee on Medical Education, which accredits medical schools, adopted the following policy statement in 1973 (6):

> The undergraduate period of medical education leading to the M.D. degree is no longer sufficient to prepare a student for independent medical practice without supplementation by a graduate training period which will vary in length depending upon the type of practice the student selects.

The quality of graduate education is of prime concern to medical schools, teaching hospitals, their faculties, their students, and the public. The quality of any educational endeavor must be judged ultimately on the basis of whether or not the students are prepared to achieve established goals. A discussion of the quality of graduate medical education, therefore, must begin with a consideration of its goals.

In 1940 the Commission on Graduate Medical Education, sponsored by the Advisory Board for Medical Specialties, published an extensive report on the status of graduate medical education and made many recommendations for its improvement. The commission described the goals of graduate medical education as follows (7):

> The residency is no longer considered by leading medical educators and practitioners to be merely a period for acquiring proficiency in special technics. Rather, it is looked upon as a progressive and graduated educational experience which is designed, first, to enable a physician to make himself proficient in a special field of practice and second, to give him the educational equipment for continued development within this field. In this concept the residency becomes a true graduate discipline.

During the past 40 years, the goals of graduate medical education have not changed. Graduate medical education is an essential phase of the formal medical education of physicians, and its principal goals are to prepare proficient practitioners of medicine and to equip them for continued professional development. These goals are the standards against which the quality of graduate medical education should be measured.

In the four decades since the commission report, graduate medical education has expanded greatly. Sincere efforts have been made to improve its quality through establishing an accreditation system and expanding the certification of individual physicians by the various specialty boards, but further improvement in the overall quality of graduate medical education in the United States is needed.

The failure to achieve a uniformly satisfactory level of quality is due partially to the historical origins and current organization of graduate medical education. Undergraduate medical education is university-based and is molded by the academic traditions of higher education in the United States. Graduate medical education is principally hospital-based. It developed from a tradition of on-the-job ap-

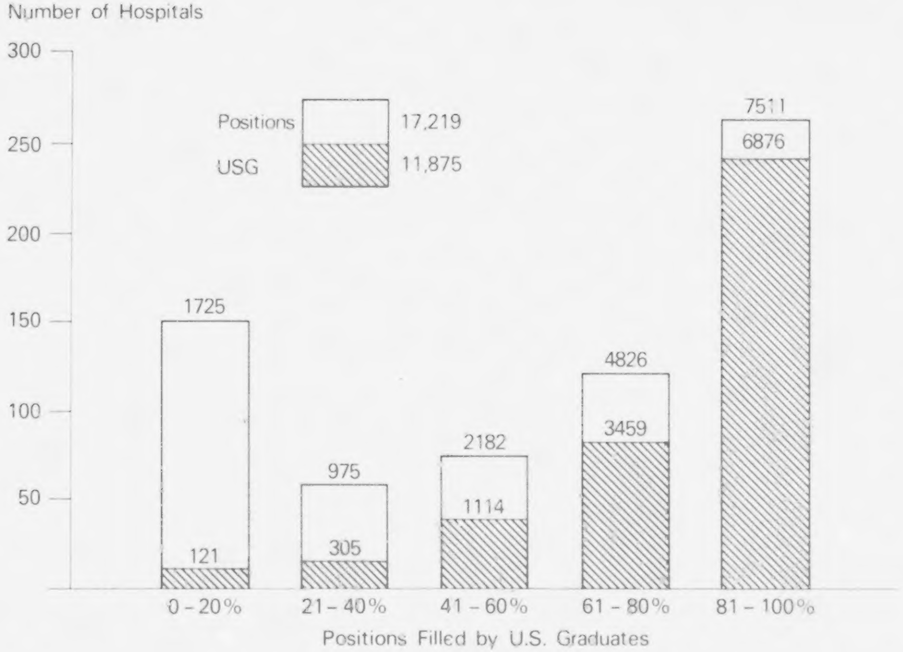

FIGURE 2.1
Distribution of 669 hospitals in the NRMP in 1978 by percentage of first-year positions offered that were filled by U.S. graduates.

prenticeship training. While undergraduate programs are provided by only 126 medical schools, according to the Liaison Committee on Graduate Medical Education,* over 5,000 graduate programs exist in more than 1,700 hospitals and healthcare facilities.

The quality of graduate medical education programs depends upon many factors. The number of faculty members and their teaching and clinical abilities are important determinants of quality. The number and types of patients, the degree of responsibility residents are expected to assume, and the adequacy of their supervision also affect program quality. These and other factors lead to judgments about quality by students and those who advise them in the selection of their graduate programs.

Quantitative measures that would explain why some programs are considered superior in quality to others are not available. It seems, however, that U.S. medical students are not attracted to some institutions and programs whose educational quality does not meet their expectations. Since an excess number of positions are available, every graduate position cannot be filled by a U.S. graduate, but there are striking differences in filling among hospitals. Figure 2.1 demonstrates a bimodal distribution among the 669 groups of hospitals that offered 17,219 first graduate year positions to U.S. students in 1978 through the National Resident Matching

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* By ratification of its bylaws by all five parent organizations, the Accreditation Council for Graduate Medical Education officially replaced the Liaison Committee on Graduate Medical Education on January 1, 1981. (See Appendix I.)

Program. There were 147 hospitals (22 percent) that attracted a total of only 121 U.S. students (1 percent) in the match; these hospitals filled only 0 to 20 percent of their available positions with U.S. students. Ninety-three of these hospitals attracted no U.S. graduates. Of the non-U.S. graduates matched, 578 (39 percent) entered these same 147 hospitals. At the opposite extreme, 268 hospitals (40 percent) attracted 58 percent of U.S. students; thus, they filled 81 to 100 percent of their positions. The remaining 254 hospitals (38 percent) filled 21 to 80 percent of their positions with U.S. graduates. Although comparably precise data on the choices of all U.S. students are not available for earlier years, estimates from matching results through the National Resident Matching Program indicate that many hospitals repeatedly fail to attract U.S. students. Graduates of U.S. medical schools seek to enter those residency programs that they believe will best fulfill their educational needs. Those institutions that do not attract U.S. graduates are clearly regarded as being undesirable.

Although detailed studies of the reasons why U.S. graduates do not enter programs in certain hospitals have not been done, geography has been identified as one determinant. Demographic and cultural characteristics in some locales doubtlessly make certain hospitals less attractive, but in many instances hospitals in similar areas lie at opposite extremes. Figure 2.2 shows that the preponderance of hospitals that fill only 0 to 20 percent of their positions with U.S. graduates are located in the Northeast, Middle Atlantic, and Midwest regions, while those hospitals attracting U.S. students to 80 percent or more of their positions are rather evenly distributed across the nation (Figure 2.3).

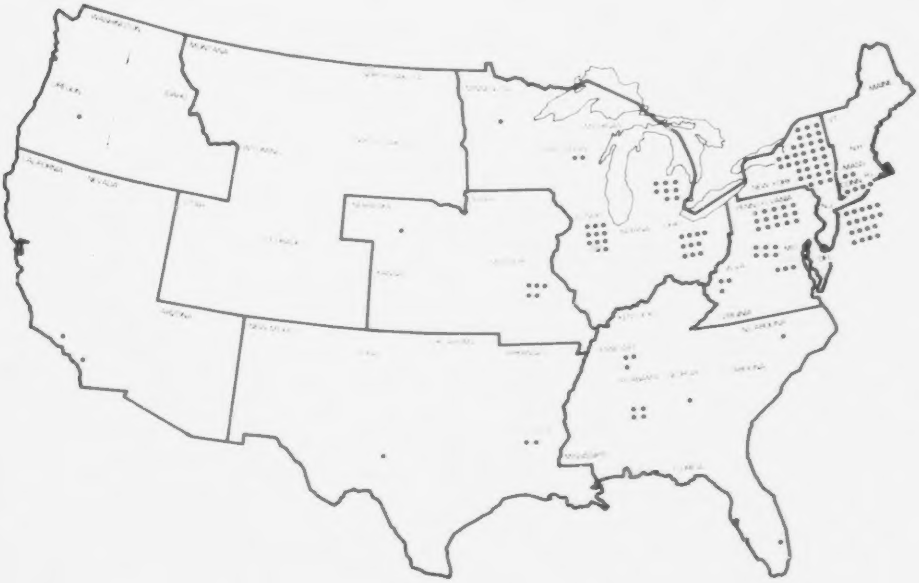

FIGURE 2.2
Location of hospitals in the NRMP in 1978 filling 0 to 20 percent first-year positions by U.S. graduates.

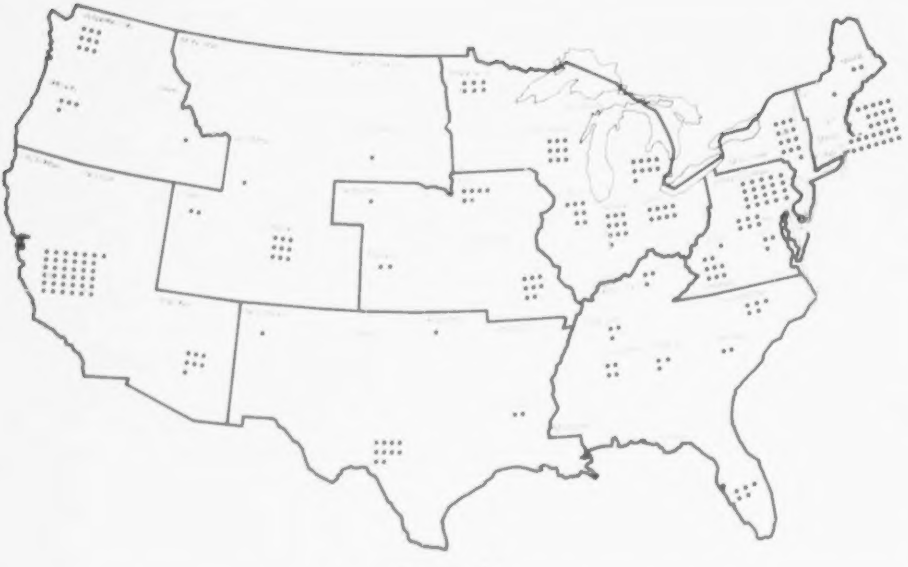

FIGURE 2.3
Location of hospitals in the NRMP in 1978 filling 80 to 100 percent first-year positions by U.S. graduates.

Although U.S. students most often seek appointments in hospitals that are associated with medical schools, this is not always the case. Of the 147 hospitals that filled only 0 to 20 percent of their residency positions with U.S. graduates in the National Resident Matching Program in 1978, 120 were associated with a medical school. Here, the designation "associated hospital" used by the National Resident Matching Program includes any relationship with a medical school for teaching at the undergraduate or graduate level.

The relationship between a teaching hospital and a medical school influences the attractiveness of graduate medical education programs. The association between a school and a hospital may be for undergraduate education only, with a hospital's graduate programs having no relationship to the school. Some associations may have been developed only recently. Large geographic distances may separate a hospital from a medical school and inhibit the development of a close relationship. Although there are impediments to having a hospital's graduate programs made attractive to U.S. graduates by their association with a medical school, the presence of U.S. graduates in residency positions is desirable in hospitals to which undergraduate medical students are assigned. In some instances, National Resident Matching Program data showed that medical schools assigned medical students for required clinical clerkships to services in associated hospitals that in 1977 had not attracted any U.S. students to their graduate programs.

Although certain specialties are currently less attractive to U.S. students than are others, even in the popular specialties of family practice and internal medicine, as depicted in Figures 2.4 and 2.5, approximately one-fifth of the programs filled 40 percent or fewer of their positions with only 5 percent of U.S. students who entered these specialties. Conversely, 83 percent of the students who chose these specialties entered programs that averaged 97 percent filled with U.S. graduates.

In 1978, 1.3 positions in graduate medical education were available per each of the 12,666 graduating students who participated in the National Resident Matching Program. More than 16,000 students are expected to graduate from U.S. medical schools in 1982. It is important that the academic medical community exert a major effort to ensure the educational quality of all programs, and if those programs that U.S. students have avoided in the past are found not to meet minimal standards, they should be discontinued and available resources devoted to those that can meet quality standards.

Changing Dimensions

Clinical education for medical students in the United States begins early in their undergraduate programs when they first interview and examine patients. The basic method for clinical education is the case study. During their third and fourth years, medical students' clinical knowledge, skills, and judgment begin to develop through their assignment to the hospital services of various specialty disciplines. On each service, they are assigned cases and participate in the work-up and study of a cross-section of patients. By graduation, medical students are expected to have acquired basic clinical skills. Generally, they have made decisions about the special areas of medicine that they wish to pursue in the graduate phase.

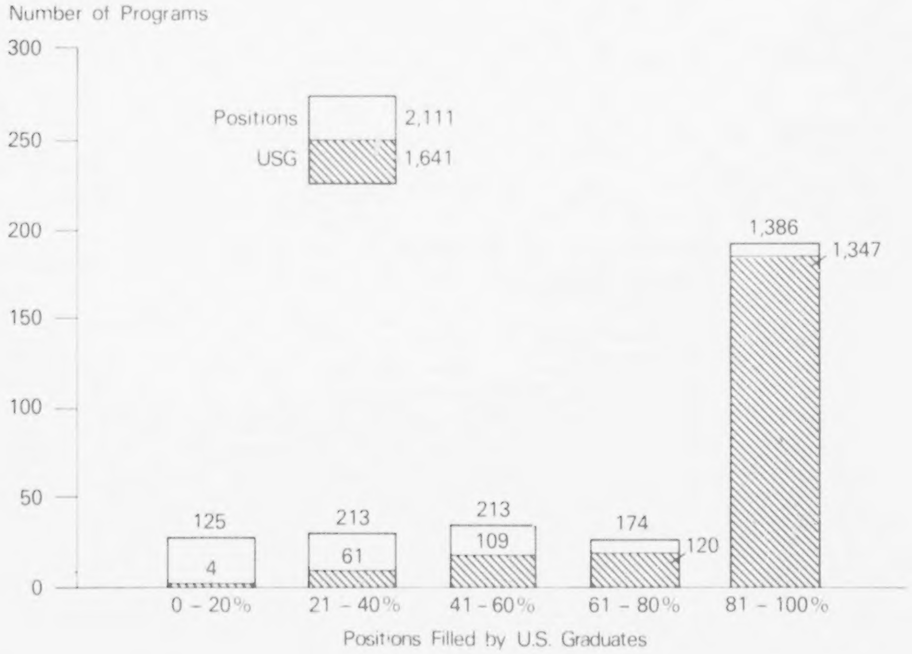

FIGURE 2.4

Distribution of 303 programs in family practice in the NRMP in 1978 by percentage of first-year positions filled by U.S. graduates.

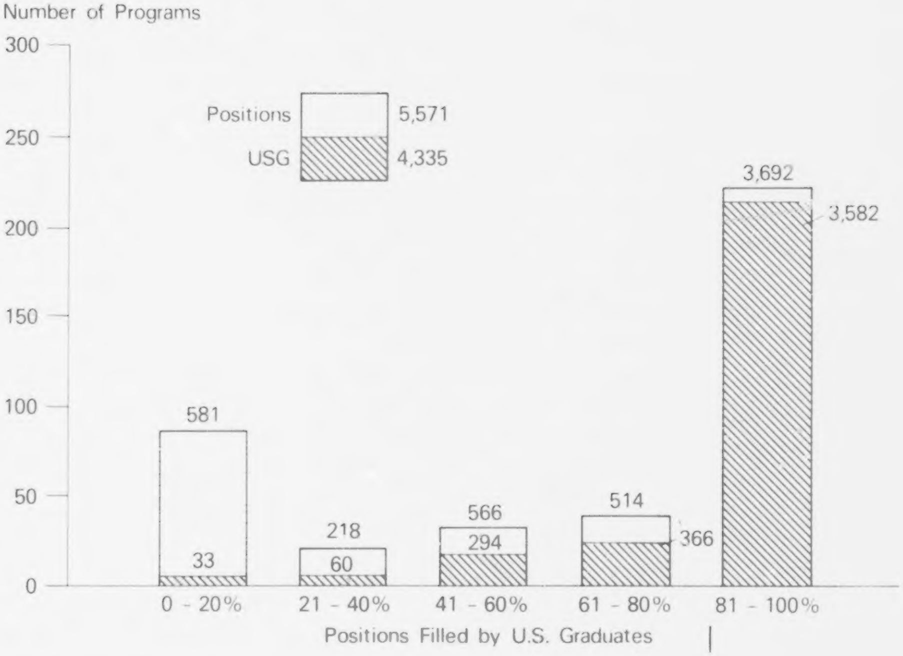

FIGURE 2.5
Distribution of 387 programs in internal medicine in the NRMP in 1978 by percentage of first-year positions filled by U.S. graduates.

Whether their careers will be limited to the practice of medicine or will combine practice with teaching and research, clinicians educated and trained during the graduate phase are expected to assume full responsibility for the care and treatment of patients with diseases and problems requiring the special attention of their disciplines. The public rightfully expects this goal to be achieved and has entrusted to medical schools, to teaching hospitals, and to the Liaison Committee on Graduate Medical Education the responsibility for ensuring that each physician who has completed the graduate phase will have attained the principal goals. The certifying boards in medicine, which have established criteria for the certification of diplomates in their specialties, provide the public with an additional evaluation of medical competence. Specialty colleges and academies whose membership criteria signify the attainment of superior skill also attest to qualifications of excellence. However, the quality of education and training is ultimately the responsibility of graduate programs and the institutions that sponsor them.

When graduate training beyond a year of internship was pursued by relatively few physicians, graduate education was based upon the personal relationship between a mentor and selected students. This relationship established a personal commitment between the teacher and each student. Their day-to-day contact in providing care and treatment to patients permitted the teacher not only to impart his knowledge, skills, and clinical judgment but also to observe the professional growth of each student. When the relationship ended, the teacher was well aware of the capabilities of each student. Each was a class of one, and each pursued a career with the stamp of the mentor shaping his or her approach to clinical practice.

The achievement of this special relationship, which has been the basic tenet of graduate medical education in the past, is now only rarely feasible. Ensuring that each student attains the knowledge, skills, attitudes, and clinical judgment commensurate with graduate medical education's principal goals has become complicated and dependent upon more than a single one-on-one relationship. Several factors account for this.

1. Now almost all graduates continue for three or more years in graduate education. In 1979, 93.2 percent of the U.S. graduating class responding to an Association of American Medical Colleges' survey declared an intent to become certified by a specialty board (8). This demand for certification, combined with a doubling of the number of graduates, has vastly increased the graduate student body and has made it difficult to ensure a consistent quality of experience for each resident.

2. The expansion of graduate programs has required large numbers of patients and faculty. Programs now often involve many institutions, and residents may rotate through several hospitals and relate to multiple service chiefs, co-program directors, and faculty members in the course of their education and training.

3. The provision of highly specialized care necessitates the organization of services within a single institution for that purpose. As a result, residents are rotated from one specialized clinical unit to another, even within the same institution.

The extent of the fragmentation of residents' experiences and the multiplicity of relationships between residents and faculty members vary. Small programs in specialties for which the educational resources can be provided largely by a single hospital service are not likely to have the problems of larger programs in specialties that are dependent upon several hospitals or clinic services for their educational settings. The generalist programs in internal medicine, family practice, and pediatrics are particularly likely to fragment their residents' experiences; and since more than half of all residents are in these specialties, this problem is significant.

From its inception, the accreditation system for graduate medical education has been based upon the preceptorial concept. Most programs are evaluated in isolation from programs in other specialties and with insufficient assessment of the institutional milieu in which they are conducted. Program directors are considered to have complete local authority over their programs. They control the educational plans and destinies of their residents. However, in a recent survey of graduating medical students, 75 percent of the respondents stated that educational merit was a major factor in the choice of a program, whereas only 11 percent cited the desire to work with a particular program director as a major influence (8). The ambience of the hospital was also given by 60 percent as important in their decision (8). Thus, it would appear that U.S. students select their graduate education on the basis of perceived program and institutional quality, not because they desire a preceptorial relationship with an individual. The apparent preference by students for programs with educational merit places a burden of responsibility on medical schools and associated teaching hospitals to ensure that a high standard of quality of graduate medical education is maintained.

An Expanded Concept

The attainment of acceptable universal quality in graduate medical education in the United States has been hampered by the perpetuation of the philosophy that each program in every specialty is independent of all other programs. This philosophy has minimized the interdisciplinary involvement of graduate program faculties in the development of overall approaches to accomplish the principal goals of graduate medical education. The isolation of graduate programs stems from their origin as apprenticeships for physicians who were seeking to acquire knowledge and develop skills from a recognized specialist. This simple organizational model is no longer tenable. The number of graduates needing three or more years of education has vastly increased. Education and training in every specialty require complex resources and involve numerous faculty. Residents in many specialties rotate through other specialty services for part of their education. A change in the academic philosophy and organization of graduate medical education is needed to ensure that the principal goal is attained for every resident. In considering changes, it must be recognized that graduate medical education has unique characteristics and responsibilities which distinguish this phase of the education of physicians from the baccalaureate and medical school phases.

College faculties grant baccalaureate degrees to students demonstrating a level of educational achievement ranging from outstanding to minimally acceptable. Their criteria for granting degrees are based principally upon students' passing a combination of courses which establish sufficient academic credit for graduation. Whether or not all graduates have the knowledge and personal attributes needed to be proficient practitioners in their field is not a principal concern of college faculties.

Medical school faculties, in selecting students from the population of college graduates, attempt to choose those who have both the intellectual ability and the personal qualities deemed necessary to be physicians. Medical school curricula are designed and organized so that students are provided the opportunity to attain the basic knowledge and skills that faculties believe are requisite for the granting of the M.D. degree. In addition, faculties are sensitive to their responsibility to identify students whose attitudes and personal characteristics are inappropriate for the profession of medicine. Their graduation criteria include both requirements for educational achievement and the attainment of acceptable professional skills and behavior; but, in granting the M.D. degree, faculties do not ensure that all graduates will be proficient practitioners in their chosen fields. This is the responsibility of the graduate and final phase of formal medical education. Providing residents an educational program that will afford them the opportunity to become proficient practitioners of their discipline during the final, graduate phase of their formal medical education is a heavy responsibility. Licensing laws and policies do not require as high a level of knowledge and skills as those expected by graduate program faculties. Graduate program directors, their faculties, and the specialty boards are expected to establish the criteria for modern medical practice.

Traditionally, certification by a specialty board has been the credential to distinguish those who are deemed particularly qualified. Granted to individuals on the basis of their having been enrolled in an accredited graduate program for a specified period of time and having passed an examination, specialty board certification has served as an external criterion of accomplishment. Unfortunately, the almost sole reliance upon externally established criteria and the isolation of each specialty's educational program from those of other specialties have retarded the development of local internal educational planning and the establishment of achievement and performance criteria by graduate faculties either within a specialty or in concert with other specialties. If the quality of graduate medical education is to be improved and if all students are to be prepared to be proficient practitioners of their specialties, graduate medical faculties must assume greater responsibility for the quality of their programs and develop internal standards and criteria as well as rely upon the external accreditation and certification systems.

Identifying Faculty

Before discussing how improvement of the internal assurance of quality in graduate medical education should be approached, it is necessary to identify the nation's graduate medical education faculties and their institutional relationships. It is conventional to display data on graduate medical education in terms of programs and hospitals. By this convention, 2,800 programs in 651 hospitals offered 17,087 first graduate year positions through the National Resident Matching Program in 1977. This presentation gives the impression that the graduate medical education faculties in the United States are distributed among numerous programs and in many hospitals. However, it obscures an important institutional relationship that must be recognized in future planning for graduate medical education. Of the 651 hospitals offering first graduate year positions in 1977, 605 were associated with medical schools, and only 46 were unassociated. In 1977, 12,588 U.S. medical graduates who entered non-military residencies began their graduate medical education in teaching hospitals associated with medical schools. Only 228 were in unassociated hospitals (9). This aggregation of graduate medical education data by medical school–teaching hospital relationships strongly suggests that graduate medical education in the United States today is principally provided by the full-time and voluntary members of medical school faculties. Furthermore, it means that academic medical centers and teaching hospitals have the responsibility for the education and training of two classes of students—the undergraduate class admitted from college and the graduate class admitted from medical school.

The fact that the institutional settings and faculties for undergraduate and graduate medical education often coincide does not mean that the approach to internal assurance of quality for graduate medical education should or can be the same as for undergraduate. In the undergraduate phase, a class of students is sequentially taught by many faculty members from both basic and clinical science disciplines. Members of the class are observed in many settings, and the assessment of their achievement and performance is derived from multiple opinions. The degree is granted on the basis of a faculty consensus.

In graduate medical education, the faculty of each clinical discipline or specialty has the principal responsibility for developing the necessary resources and planning the education for the students in its program. Based upon minimal standards set by the external accreditation and certification systems, programs vary in length and resource requirements. Heretofore, graduate faculties generally have not been expected to examine whether or not the separate programs in their institutions go beyond the minimal national requirements and are achieving the principal goals of graduate medical education for every student for whose education they are responsible.

Resisting Change

In November 1971 the Assembly of the Association of American Medical Colleges approved a statement urging that the academic medical centers assume institutional responsibility for graduate medical education. Guidelines were subsequently articulated to assist faculties seeking to develop a plan for institutional assumption of responsibility for the various residency programs in their academic centers (10). A survey of U.S. medical schools in 1974 revealed that only 19 centers had definitely established procedures for implementing this concept (11).

The concept that institutions should ensure the quality of their programs in graduate medical education is resisted at both national and local levels. This resistance stems, in part, from concerns that such an emphasis would undermine the accreditation authority of the Liaison Committee on Graduate Medical Education and the residency review committees and the certification authority of the medical specialty boards. The specter of "institutional accreditation" is raised with the implication that eventually the review of programs by the residency review committee of each specialty would be superseded by blanket institutional authority to conduct programs in the various specialties without regard to a national standard. Less frequent concerns are that certification of individuals by national specialty certifying boards might be viewed as less necessary because institutions eventually might provide individual recognition of accomplishment by some form approximating the granting of a degree.

Resistance also derives from the fears of program directors that their autonomy would be compromised if local institutional review of the quality of their programs is initiated. Finally, in the aggregate, the teaching and administrative staffs of teaching hospitals are concerned that their autonomy would be compromised by the medical schools with which they are associated.

This resistance to greater institutional interdisciplinary responsibility for the quality of graduate medical education is decreasing. Interdepartmental graduate education committees have been established in some teaching hospitals, and, according to information in mailing rosters maintained by the Association of American Medical Colleges, 115 medical schools have identified individuals with administrative responsibility for graduate medical education.

In 1980 the Liaison Committee on Graduate Medical Education presented a revision of the General Requirements section of the "Essentials of Accredited Residencies" to its sponsoring organizations for ratification. The revision requires that institutions adopt internal policies and procedures to ensure the quality of the graduate medical education programs they sponsor. Implementation of the revised General Requirements should enhance the attention of institutions to their educational responsibilities.

Institutional Quality Control

While continuing the organization of graduate medical education by specialty, with program directors and their faculties having major responsibility for planning, supervising, and evaluating programs, and with the Liaison Committee on Graduate Medical Education and the residency review committees setting national standards for program accreditation, each institution that provides graduate medical education should involve administrators, program directors, their faculties, and residents in the allocation of educational resources and in the local evaluation of the quality of their programs.

(Conference discussants offered the following suggestions: (*a*) that the definition of institutional responsibility or involvement be clarified; (*b*) that the emphasis be on the intrainstitutional monitoring of quality; (*c*) that the issue is not whether medical schools or hospitals should control

> and govern graduate medical education programs but that the sponsoring institution or institutions, however defined, must assume responsibility for educational quality; and (*d*) that this responsibility goes beyond the specialty in which the education takes place.)

Graduate medical education, like education in other fields, is increasingly specialized. A faculty with particular knowledge and skills in a discipline is required if residents are to be educated and trained as proficient practitioners of the discipline, and national standards for their education and training are needed. It can, therefore, be expected that graduate medical education will continue to be organized by specialty. However, delegating the major responsibility to a faculty composed of specialists in the clinical discipline should not render them immune from being accountable to their colleagues in other specialties for the quality of their program. *The quality of all programs in an institution should be the concern of the entire institution.* How institutions develop and implement approaches to the allocation of resources and the surveillance of programs will vary, depending upon program size and complexity. No particular administrative approach should be imposed in all settings. Whatever the approach, it should facilitate collegial interaction among specialty faculties, residents, and administrators; promote constructive criticism; and permit the correction of identified deficiencies.

The national standards for education in each specialty provide a useful benchmark against which to measure the minimal requirements for programs. Without question, programs that cannot meet national standards should not be accredited. However, there is considerable diversity in the characteristics of the institutions that provide medical education, and opportunities for the enrichment of the educational experience made possible by this diversity should be encouraged.

> *Program directors and their staffs should strive to supplement national standards to achieve the principal goals of graduate medical education in their institutions and specialties based upon local resources and institutional missions. In planning and conducting their programs, they should view adherence to the national standards established by each residency review committee as the necessary minimum.*

The most difficult challenges faced by educators are the development and articulation of an educational plan to accomplish their goals. Selective judgment must be exercised in determining the breadth and depth of knowledge students must acquire and the degree of skill they must attain. In clinical medicine, physician-teachers must inculcate appropriate attitudes toward patients and ensure the acquisition by each resident of sound clinical judgment. An educational plan for every specialty should include criteria for determining whether or not residents have attained knowledge and skills as well as appropriate attitudes and judgment. This can be accomplished only if measurable or observable educational objectives are established that can be utilized as criteria to judge residents' progress throughout their education and training. An educational plan and its criteria for evaluation should also ensure that residents progress toward achieving certification by the certifying board.

> *Program directors should be responsible for the development of educational plans that they believe will assure all residents an opportunity to acquire the knowledge, skills, and clinical judgment necessary to prepare them to be proficient practitioners and/or academicians and that will foster attitudes that will lead to continued professional development in their specialty. Pro-*

> *grams should have a periodic intramural evaluation to determine whether or not the educational plans developed by the program directors are being achieved. This intramural evaluation should be conducted by a team including residents, a spectrum of program faculty, and the faculty of interdependent programs in the institution.*

The knowledge, skills, and teaching ability of the faculty are very important determinants of the quality of graduate medical education. Well planned, formal teaching exercises contribute a great deal to the education of residents, but the case method is the foundation of clinical medical education during both the undergraduate and graduate phases. The emphasis on learning by being involved in the care of numerous patients is the principal strength of U.S. medical education. It also has a potential for abuse, particularly in graduate education. Because residents contribute significantly to the care of patients as they learn from each case, the impetus to develop graduate programs and the criteria for determining the number of residents to be in a program may be related more to the service loads of hospitals than to the educational needs of residents.

It is difficult to achieve consensus on the issue of balance between case load and education. The controversial issue of education versus service is discussed more comprehensively in Chapter 6. A key factor in reaching consensus within any institution is the degree of faculty supervision. Supervision of residents by more senior residents and by faculty should ensure that each patient's problems are managed optimally, that residents learn as much as possible from each patient for whom they are responsible, and that they are provided increasing responsibility for patient care as their knowledge and skills increase. This requires both careful planning by the program director and discipline on the part of the faculty. If residents carry a case load in excess of their abilities to learn and if the faculty members are unable to supervise residents effectively, the quality of both graduate education and patient care suffers. It is not possible to derive a case load formula for every specialty that would fit all institutions or programs. The energy, stamina, and intellectual abilities of residents vary, and the supervisory resources available to institutions and programs also vary.

Case loads and time demands need to be examined particularly for junior residents. First-year residents are often expected to carry case loads and hours of duty that stress their mental and physical capacities (12). While there is merit in having young physicians learn that their responsibilities to patients supersede their own personal desires and comfort, the degree to which the traditional demands placed upon junior residents exceed their capacity and may be contrary to good education and training and patient care should be examined. Faculties must be aware of the need to ensure that residents in all programs are carrying case loads consistent with high quality patient care and education.

> *Residents' patient care responsibilities should be organized and scheduled to promote optimal educational opportunities. Supervision by responsible faculty should ensure excellence in the care of patients and permit the faculty to assess each resident's abilities and needs. Patient care demands that exceed residents' abilities to function effectively should particularly be avoided.*

As they progress through their graduate programs, residents should be evaluated periodically to ensure that both they and the faculty are aware of their strengths and weaknesses. Approaches to evaluation will vary, depending upon the specialty and the program emphasis, but should include an assessment of a resident's knowledge, interpersonal skills, clinical judgment, clinical skills, and attitudes. Formal evaluations should occur at least annually. The decision to permit residents to assume a greater level of responsibility for patient care should be dependent upon such evaluations. It is particularly important that residents receive candid feedback, from both formal evaluations and day-to-day interactions with the faculty.

> *Residents should be formally evaluated periodically and apprised of the assessment of their professional development. On the basis of this feedback, the residents' programs should be adapted to their educational needs. Furthermore, with the advice and consent of the faculty, program directors should assume responsibility for attesting to the satisfactory completion of the educational requirements of the program by the residents.*

Graduate programs now often involve several institutions. In a growing number of institutions, a single program may integrate the resources and facilities of two or more institutions. A single program director is in charge of an integrated program and is responsible for its organization and for orchestrating the contributions of a faculty divided among several institutional sites. Administrative integration of programs has been a positive movement toward reducing the fragmentation of graduate medical education. However, just as attention should be paid to ensuring continuity in patient care, attention should be given to ensuring continuity in the graduate education of physicians. Each resident is an individual with unique strengths and weaknesses who must be provided opportunities to acquire the knowledge, skills, attitudes, and clinical judgment required for the practice of a discipline. However, simply providing opportunities is not sufficient. The potential fragmentation inherent in providing a diversity of learning opportunities requires the development of strategies to maintain continuity in evaluating each resident's progress and in tailoring each person's program to meet individual needs. This is a major responsibility for today's program directors who, unlike their predecessors, cannot always develop personal relationships with residents in every educational setting. Since this problem is common to all specialties, institutional attention should be focused on the need for ensuring continuity in graduate education. Minimizing the fragmentation induced by the need for diverse educational opportunities will enhance the quality of graduate medical education even though the one-on-one preceptorial relationships of the past cannot be restored in today's complex medical care and graduate education system.

> *Faculties should develop techniques for the organization of residents' programs that will promote continuity in their educational experience.*

To accomplish the principal goals of graduate medical education, programs must adapt their educational approaches to the needs of each resident. The intellectual abilities and the personal qualities of U.S. medical school graduates are generally high, but variability still exists. It is not sufficient to provide a common and inflexible education paced similarly for all residents. The maximum time permitted to complete a program and the rate of progress through each segment should be geared to the educational attainments and goals of a resident and not based upon externally set minimum time requirements nor upon the service needs of the institution.

> *So long as minimum standards are maintained and to the extent practi-*

cally feasible, program flexibility should be sufficient to accommodate the diversity of residents' abilities and goals in their practice and research careers.

(Conference discussants noted the problems attendant to ensuring flexibility in a rigid system that is particularly constrained by limited resources and by requirements of the various residency review committees and certifying boards.)

Residents, as they progress through their programs, assume an important responsibility for the education of their junior colleagues, medical students, other health professionals, and patients (13). Their effectiveness in accomplishing these responsibilities can be enhanced if their role as educators is specifically considered in planning their programs.

The role residents play as educators should receive particular attention. Their programs should be planned to enhance their ability to teach and to evaluate the performance of students.

The entire graduate medical faculty must be concerned with balancing resources against programs to achieve optimal quality. For all institutions and for every program, achieving the principal goals of graduate medical education must be the basic measure of quality. However, institutional and program missions may vary. For some, the mission may be to prepare a significant number of clinical investigators and academicians. For others, the mission may be to prepare practitioners for a particular state or region. The resources should be sufficient to accomplish both the institutional mission and the principal goals of graduate medical education. Since resources are always finite, graduate faculties should apply rigorous standards in approving the development of new programs or the expansion or change of mission of existing programs.

The number, type, and size of programs in an institution should be tailored so that the available resources will be sufficient to ensure that every program can reasonably be expected to achieve the principal goals of graduate medical education. The program director and ultimately the residency review committee must constantly address numbers and types of faculty, patient volume and mix, and numbers and types of residents that are needed to achieve the balance required for high quality education and patient care.

The acceptance of the goal and the implementation of these recommendations could improve the quality of graduate medical education in the United States without compromising the current national systems for accreditation and certification or impairing the opportunities for program directors, faculties, and institutions to accomplish their goals. Academic medical centers, consisting of medical schools and associated teaching hospitals, are now the principal providers of graduate medical education to essentially all U.S. medical school graduates. This makes it probable that these recommendations will eventually be applied through the continued development of graduate medical faculties with educational values characteristic of the academic tradition of universities. The transition will continue to be evolutionary rather than revolutionary, and the degree to which it extends will be dependent upon the resolution of many complex issues. These include how graduate medical education is to be financed, how it is to be accredited, and how national policies to influence the specialty distribution of physicians evolve.

Conference Discussion†

Dr. Fredric Burg reported for the six conference workshops of 70 individuals who discussed the quality of graduate medical education. While no controversy surrounded the philosophies delineated in this chapter, discussants identified a number of unanswered questions that they felt should be addressed. Dr. Burg summarized them:

The first questions concern institutional accountability.

1. How is the institutional review defined? Is the institution the hospital or the medical school? Does institutional review mean governance, or is this an advisory function?

2. How does one measure the quality of a program? Should it be based on products of the program? Should there be a longitudinal evaluation of the product? Should there be an evaluation of the process of education? What is the importance of a critical mass (*a*) of different programs at an institution, (*b*) of numbers of faculty, and (*c*) of numbers of residents at each level? Who has the responsibility for determining critical masses in an institution, and how should that process be carried out?

3. Given that a process of institutional accountability for quality is recognized, should the function of the institutional activities be monitored by another body? Should guidelines be established for institutional review? Who should evaluate the quality of an institutional review? Is this level of review necessary, or can this be left to self-determination by the institution?

The second area of questions surrounds standards.

1. Should the quality of an institution's program be addressed with regard to minimum standards alone?

2. Is an institution living up to its responsibilities by determining that the residency review committee standards alone are being met?

3. How does one ensure that the standards established by a residency review committee in one discipline are equivalent to the standards of another?

The third area focuses on program evaluation.

1. Should there be more of a role for the clinical, non-geographic full-time faculty in this process?

2. Should faculty members be evaluated in a systematic fashion?

3. Should the learning experience be evaluated, and how can it be evaluated?

4. Should the patient be involved in program evaluation?

5. How should the program be evaluated where there are problems in dealing with the clearly incompetent resident who is not remediable and yet no action is taken?

6. Can there be a better definition of the institution's responsibility?

Three questions relate to resident evaluation.

1. Should senior residents be involved in a systematic evaluation of junior residents?

2. How should the role of residency program directors to attest to successful completion of educational requirements of residency programs be managed in light of institutions awarding concurrent service endurance certificates?

3. Should not more systematic feedback to residents be required regarding their

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† The questions generated in the discussion of this chapter merit the close attention of institutional administrators, program directors, faculty, residency review committees, and the Accreditation Council for Graduate Medical Education as they move toward the implementation of the revised General Requirements section of the "Essentials of Accredited Residencies."

deficiencies (on a regular interval) so that deficiencies can be corrected?

Finally, three other issues were raised.

1. What is the responsibility of the resident to ensuring the quality of a graduate program?

2. Should more emphasis be given to research careers?

3. How does one deal with the problem of a demand for technical competency that requires more exposure per resident, which requires a greater patient load that may result in an inadequate number of residents to handle all the service requirements?

In conclusion, Dr. Burg indicated that a final chapter is needed to define how the task force's report on quality should be used and by whom if it is to have any impact on graduate medical education.

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Chapter 3

The Transition Between Undergraduate And Graduate Medical Education

The need to view medical education as a continuum was well articulated by the Association of American Medical Colleges in 1965 (14). Despite the apparent acceptance of the concept of undergraduate and graduate medical education as a continuum, many students find the transition between the undergraduate and graduate phases difficult. The timely decision by the Council on Medical Education of the American Medical Association to eliminate freestanding internships, coupled with the decision by several specialty boards to permit entrance into programs in their specialties directly after graduation from medical school, has contributed to the confusion. Inadequate information about graduate programs and a limitation in the resources available to teaching hospitals have compounded the problem.

Smoothing the transition by ensuring that sufficient first graduate year positions of high quality are available to meet the needs of graduates from U.S. medical schools, providing adequate information about them, improving counseling, and making the application and selection process less hectic will require concerted action by medical schools, graduate medical education programs, teaching hospitals, and their accrediting bodies. Support for a directed effort to improve the transition must also come from certifying boards and specialty societies. The recommendations that follow can be implemented only if all those involved place a high priority on improving the quality of medical education and show a concern for the needs of students at this critical juncture in their professional education.

Career Counseling

Although the separation of undergraduate from graduate medical education is conventional, most students begin their uninterrupted education and professional development with matriculation into medical school. More particularly, their acquisition of clinical knowledge and skills begins when they have their first contact with patients. In some schools, this may start at matriculation. As an extension of students' clinical education, graduate medical education is directed primarily toward the refinement of clinical and problem-solving skills and the enlargement of clinical knowledge. If both students and faculty recognize and accept this concept of the continuum, development of a more effective career counseling relationship between faculty and students and improved articulation of the undergraduate with the graduate phase will be facilitated.

Most medical schools attempt to provide advisers to entering students. Too often, the role of advisers and the services they are expected to offer to students are not clear to either. Troubled students often seek advice during their early terms when they have academic difficulties, personal crises, or financial problems. Later, as they recognize the myriad career options available to them, all students, formally and informally, begin to ask for assistance in choosing among alternative careers. Finally, as the time for making decisions about graduate medical education programs draws near, students want and need very specific and active counseling advice from knowledgeable faculty and residents.

An important part of the career selection process is the elective final year. During the 1960s, when there was a movement toward shortening medical education and encouraging early career decision-making, most U.S. medical schools abandoned their structured, required final-year curricula and made most or all of the final year elective. This movement toward greater flexibility is generally viewed as a progressive and satisfactory change; however the degree of effective utilization of the opportunities provided by an elective final undergraduate year varies widely among students and among institutions.

(Before effective counseling can take place, the purpose of the final year must be determined. Conference discussants agreed that all M.D.s should be "good physicians or should be broadly educated," but when students would have an opportunity to synthesize their knowledge in the care of individual patients was not clear.)

Students should use the elective final year both to explore their potential interest in and talent for specialties they are considering and to acquire experience in areas to which they are unlikely to gain adequate exposure during their graduate years. Those who approach their final year undecided about career directions should be counseled early to sample areas in which they may have interests so that as the time for decision-making approaches, they may have had opportunities to gain as much insight as possible. Students who are comfortable with chosen career paths should be advised to avoid restricting their elective opportunities to education in the areas they have selected and should be assisted in choosing electives that will maximize their strengths and complement future career development.

All of these demands on a counseling system by medical students and faculty require that the dean assume the leadership in developing a system that provides mechanisms to identify competent faculty advisers, to educate and train them in their various roles, and to ensure that students have easy access to these individuals. Members of the administration and faculty of the medical school should formulate and agree upon sound approaches to advising medical students and disseminating information necessary in their counseling at this stage of their development. Former students and current residents can be helpful in supplying information and counseling students. Some medical schools have successful arrangements with physicians in practice who serve as role models and career counselors to medical students.

Benefits accrue to medical students when administrative officers or other knowledgeable individuals in the dean's office have broad familiarity with and insight into the entire transition process. These persons can provide students with the whole picture of choosing a residency as well as screen students and direct them to the proper resources and advisers. Also, persons with broad knowledge can give students a good general approach to the elective year and can provide guidance for the faculty advisers.

The preparation of advisers to be effective counselors should include (*a*) detailed information about the backgrounds and strengths and weaknesses of those they are to advise; (*b*) guidance regarding the electives that are available and the selection of electives that will complement a student's graduate medical education plans; (*c*) information about the quality of electives offered in other institutions and faculty policies on students' taking electives at other institutions; (*d*) assistance in the assessment of educational trends in their own and related specialties; (*e*) information about national and regional manpower needs in the various specialties; and (*f* [illegible]'s about the policies, procedures, and deadlines of the National Resident Matching Program and the options students have in the matching program.

In their counseling roles, advisers should not act as recruiters for their specialties. Rather, they should assess students' talents for their field and transfer to other advisers students they consider unlikely candidates for their specialty.

> (Conference discussants recommended that the AAMC develop a data base by types of fourth-year program opportunities, electives available, and student counseling available and monitor the trends. Discussants were concerned that all too often advisers lack factual information and rely instead on personal preference. One suggested that the AAMC Council of Academic Societies develop a brochure to assist advisers.)

> *Medical schools should develop a cadre of faculty responsible for counseling students regarding their career development and the selection of their first graduate year program. These faculty members should be especially trained to be effective and reliable counselors. Former students and current residents can also be helpful in supplying information and in counseling students.*

> *The Liaison Committee on Medical Education, in its review of schools for accreditation, should place a particular emphasis on the counseling provided to students by the faculty.*

Program Information

One of the strengths of American medical education is that, at the transition between undergraduate and graduate medical education, all students have opportunities to move from one educational setting to another. One of the weaknesses for many students at the transition is the paucity of information about graduate programs available to them. At one time, the American Medical Association regularly published a directory which provided basic data about each program offered. During the 1970s, this directory was published erratically and was never timely for student purposes.

> (Conference discussants pointed out that the recent edition is improved in content and timeliness of publication.)

In 1975 the National Resident Matching Program began publishing its own directory, which it distributes to students about October 1 of each year. Currently, this is primarily a listing of programs plus the number and types of positions offered. The Organization of Student Representatives of the Association of American Medical Colleges has expressed a willingness to participate in expanding the directory information available through the National Resident Matching Program. The American Medical Association staff is also exploring means for the more regular and timely publication of its directory. Two competing directories would not serve students' needs.

> *Working together, the Liaison Committee on Graduate Medical Education,*[†] *its sponsoring organizations, and the National Resident Matching Program should publish annually a directory of all programs offering positions to first-year graduates. The directory should contain as much information about the characteristics of the programs as is feasible. It should be available to students no later than October 1 each year.*

A national directory of graduate programs cannot provide students with a subjective evaluation of the educational quality of programs. Subjective impressions can be obtained from recent graduates of a school and made available to students interested in the programs that the recent graduates have completed. The Organization of Student Representatives of the Association of American Medical Colleges has developed a model form for recording information about programs which medical schools could send to their graduates for use in compiling an information file.

[†] By ratification of its bylaws by all five parent organizations, the Accreditation Council for Graduate Medical Education officially replaced the Liaison Committee on Graduate Medical Education on January 1, 1981. (See Appendix 1.)

> *Medical schools should regularly canvass their recent graduates to obtain information about their perceptions of the graduate programs they have entered. This information should be made available to students to assist them in making their graduate education plans.*

Application Cycle and Selection

The expanding number of graduates each year from U.S. medical schools and the diversity of first graduate year programs available to students make the development of a workable process of application and selection imperative. The National Resident Matching Program is the foundation upon which an improved process can be developed. Its establishment in 1951 as the National Intern Matching Program was a major step toward easing the pressure on students to make premature decisions. Were the National Resident Matching Program not in place today, the transition would be chaotic.

At present, the vast majority of graduate medical education institutions and their sponsored programs use the National Resident Matching Program and responsibly adhere to its policies and procedures; however, some institutions and programs do not participate. These nonparticipants notoriously set deadlines for application and selection that are not coordinated with the National Resident Matching Program's cycle; thus, they place undue pressure on students to make premature decisions and tempt program directors who are participating in the National Resident Matching Program to petition students for early guarantees of accepting their offers. While only a small number of students encounter such problems, this unsound educational policy should not be tolerated. The quality of a graduate program depends in part upon providing students maximum opportunity to make rational and informed decisions in selecting their specialties and programs. Requiring all accredited programs to utilize the National Resident Matching Program is reasonable and consistent with the purpose of accreditation.

> *All programs in graduate medical education that select immediate graduates of medical schools accredited by the Liaison Committee on Medical Education should be required to utilize the National Resident Matching Program as a condition of accreditation by the Liaison Committee on Graduate Medical Education.*

> (Although some conference discussants did not like this use of the accreditation process, they offered no alternative.)

> *The universal application form being developed by the Association of American Medical Colleges should be used in making selection decisions.*‡ *Use of the universal application form will not inhibit program directors from obtaining additional information from students in whom they are interested. Directors of residency programs that require additional data, such as biographical sketches, should indicate in their brochures the nature of any sup-*

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‡ Since this recommendation was made, the AAMC Executive Council authorized implementation of the Universal Application Form in the spring of 1981 for students applying to programs for their first graduate year starting in 1982.

plemental information to be sent with applications. The forms should be made available to students at the time they receive the National Resident Matching Program agreement forms and should provide return cards so that their receipt by program directors can be easily verified to students.

Program directors should not request evaluation letters and transcripts from deans' offices and letters of recommendation from faculty until there has been sufficient opportunity for students to be evaluated by the faculty. To ensure that premature evaluations are not requested, program directors should not expect to receive letters and transcripts prior to October 1 of a student's final year unless there is a justifiable and compelling need for an earlier assessment. Adherence to this policy by deans, faculty, program directors, and students will inure to the benefit of all.

The deadline for both students and program directors to make final decisions and submit rank order lists to the National Resident Matching Program should be as close to the first of February as possible. At present, the deadline falls in the second week in January. Extending this deadline by two or three weeks will significantly expand the time available to students and programs for interviews and for decision-making. The Christmas holiday season can be utilized more effectively for interviews, and selection committees will have more time for deliberation after the holidays. The announcement of the match results should be in March, as close to the 15th as feasible.

(Conference discussants recommended that results of the match be available by computer access instead of relying on the U.S. mails. One conference discussant indicated that specialties that experience difficulty recruiting residents will be less eager to see this matching schedule adopted.)

There should be a uniform starting date for all graduate medical education programs, and this date should occur no earlier than June 24. An orientation should be provided to all new residents. It should include (a) an explanation of the mission of the institution and of the goals and objectives of its programs; (b) a review of the expectations for the first-year resident, including the educational program, the teaching of medical students, and the use of the medical record system; and (c) a clear description of the evaluation procedures employed by the institution and the training program.

The application cycle as proposed would follow the calendar outlined below:

May 15—NRMP student agreement forms and uniform application forms available to medical schools for distribution. Institutional agreement forms sent to institutions.

July 1—Institutions return agreement forms to NRMP.

July 30—Students return agreement forms to NRMP.

October 1—*NRMP Directory* distributed to students.

October 1—First date deans' letters and transcripts available from medical schools.

January (as late as feasible)—Students and institutions submit rank order lists to NRMP.

March (as close to 15th as possible)—Match results announced.

June 24 to July 1—Institutional starting time.

Student Visits and Interviews

Policies and procedures for visits and interviews vary. Some institutions and programs accommodate students on an ad hoc basis. Others have highly structured visit and interview systems that require students to appear only by invitation on specified days, usually only after letters and transcripts have been evaluated.

(Conference discussants urged program directors to be more flexible in accommodating students' needs.)

When the opportunities for interviewing for training positions are limited, students may incur both considerable travel expense and inconvenience in reaching the program sites. A survey at one institution in the spring of 1978 bore this out. Eighty-seven senior medical students completed a questionnaire designed to elicit information concerning their experiences in applying and interviewing for residency positions. Fifty-one of these students reported expenditures of $300 or more for transportation, meals, and lodging for visits and interviews. Five reported expenses in excess of $1,000. Only 15 had spent less than $100. It is important that the students be provided as much information as possible during the interviews and that their time and money be conserved.

Publication of scheduled visitation dates early in the application cycle will assist students and schools in planning their final-year academic programs. All institutions and programs are urged to accommodate students whose schedules do not permit adherence to a rigid interview system without undue cost in time and money.

Institutions and programs that adhere to a structured and scheduled procedure should offer a number of dates for visits by students (at least six to 10) spread over several months. If interviews are conducted only after credentials and letters have been reviewed, they should be scheduled only during the 110-day period between October 1 and January 20.

Interviews should be structured so that they not only allow faculty to learn about the students but also provide the students with as much information as possible about the programs. Since residents can make a valuable contribution to the selection process, they should participate in the interviews.

Types of First Graduate Years

Prior to the 1970s, the first year of graduate medical education was called an internship. Only individuals who pursued additional graduate years entered residencies and were called residents. Internships were of two types, straight and rotating. Straight internships were offered principally in internal medicine, pediatrics, surgery, and pathology. Rotating internships were institutionally planned and consisted of a variety of rotations often emphasizing one specialty or another. The specialty boards and residency review committees of all specialties except those that offered straight internships did not permit entrance into training programs directly from medical school, and students entering these specialties first completed straight or rotating internships.

The American Medical Association Citizens Commission on Graduate Medical Education in 1966 recommended (4) that "the internship, as a separate and distinct portion of medical education, be abandoned, and that the internship and residency years be combined into a single period of graduate medical education called a residency and planned as a unified whole."

In the early 1970s, two policy decisions evolved in an attempt to implement this recommendation. First, the Council on Medical Education of the American Medical Association announced that, after 1975, internships (or first graduate years) would no longer be separately approved and that freestanding internships in institutions offering no other graduate medical education would not be permitted. Almost simultaneously, several specialty boards dropped their requirement that individuals complete internships prior to entering their training programs and permitted entry immediately after graduation. Several of these boards required that, either as a part of the first graduate year or interwoven into later years of the program, residents receive education and training in other disciplines.

To accommodate these policy changes, the Council on Medical Education devised three designations for the types of programs to be offered in the first graduate year (15):

> C—CATEGORICAL FIRST YEAR—These are first-year programs, planned, sponsored, and conducted by a single, approved residency program as an integral part of that residency. The content of such a first-year will be limited, generally, to the specialty field of the sponsoring residency program.
>
> *—CATEGORICAL* FIRST YEAR—The asterisk designates a first-year program that will be planned, sponsored, and supervised by a single, approved residency as an integral part of that residency. The content need not be limited to the specialty of the sponsoring program but may include experience in two or more specialty fields as determined by the sponsoring program.
>
> FLEX—FLEXIBLE FIRST YEAR—The first year will be sponsored by two or more approved residencies and will be jointly planned and supervised by the residencies that sponsor it. Such a first year is designed to give a broad clinical experience for (1) students who feel the need for this type of first year; (2) program directors who feel that such an experience will best serve the purpose of subsequent graduate education in their field; and (3) students who have not yet decided on their specialty but may wish to choose among several fields during their first graduate year. The content of a flexible first year must include four months of internal medicine, but the remainder of the year may be designed in accordance with the purposes of the two or more sponsoring residency programs and the interest and needs of the student.

Experience has now demonstrated significant problems with these designations and the approval and accreditation policies that apply to the Categorical* and Flexible types. The Categorical (C) type of first graduate year presents little difficulty. Residency review committees for each specialty are well acquainted with the educational standards set forth in their Special Requirements and in reviewing the educational plan for programs in their specialty are able easily to assess the first graduate year in the context of the total program.

However, when a residency review committee encounters a Categorical* or Flexible first year type sponsored by a program in its discipline but composed of educational experience in specialties other than its own, it is not comfortable judging the quality of the other specialty offerings. The dilemma is described by John Romano, professor and chairman, Department of Psychiatry, University of Rochester (16): "The assumption that the department of psychiatry would, or could, be in a position to supervise or be responsible for the internship assignment in medicine, pediatrics, neurology, or family medicine in hospital and clinic services at some distance is not only mistaken but patently absurd. When one considers how such an internship could be inspected, examined, or evaluated by review committees, one realizes how impossible is the task. One has only to remember how perfunctory and inadequate is the evaluation of psychiatric residency by the residency review committee."

While it might be assumed that in institutions sponsoring several graduate programs the Categorical* or Flexible types would consist of rotations through approved and accredited programs, such is not necessarily the case. For example, the required experience in internal medicine for a Categorical* psychiatric program may consist of four months' assignment to the medical service of a psychiatric hospital, and a Flexible program cosponsored by anesthesiology and obstetrics can consist of rotations through services in hospitals where there are no other residents.

These designations and their attendant sponsorship and accreditation policies have clearly proved to be unsatisfactory. They tend, in fact, to perpetuate the first graduate year as a separate entity rather than to facilitate the development of a unified residency plan as proposed by the American Medical Association Commission (4).

The problems presented by the current designations and quality control of the first graduate year must be resolved by simplifying the designation system and placing greater responsibility for oversight of quality on both the residency review committees and institutions. The Liaison Committee on Graduate Medical Education has proposed changes that should accomplish this goal.

The Liaison Committee on Graduate Medical Education proposes to merge the Categorical and Categorical* designations into a single designation entitled Categorical:

> CATEGORICAL PROGRAMS: Categorical (C) are programs in a specialty that meet the special requirements of the residency review committee for that specialty. Some specialties require that residents have complementary educational experiences in other disciplines. Whether it is required that such experiences precede or be interwoven into the education and training for the specialty, institutions sponsoring such programs and the program director should make the necessary arrangements for residents to gain these complementary experiences in educational settings that fulfill the special requirements of the residency review committee for such specialties.
>
> (Conference discussions revealed that confusion persists about the effect of merging Categorical and Categorical* designations. The asterisk designation has been used to indicate that the content of the first year of a program includes some experience in a specialty field other than that of the sponsoring specialty. Elimination of this designation will not preclude the provision of educational experiences in other specialties by programs. The special requirements for each specialty will determine the conditions that must be met in the design of multispecialty educational experiences.)

Eliminating the Categorical* designation and placing the responsibility for specifying acceptable settings for complementary education on the residency review committees of those specialties that require such experience will allow each residency review committee to specify when and how programs and institutions should provide educational opportunities in clinical disciplines outside the specialty. Some residency review committees may restrict complementary education and training to accredited programs in the other disciplines; other residency review committees may be more permissive and allow the use of nonaccredited settings. If the latter is chosen, it would be desirable for the residency review committee to articulate minimal requirements for these settings.

The Liaison Committee on Graduate Medical Education proposes to change the designation of Flexible programs to Transitional programs.§

> TRANSITIONAL PROGRAMS: Transitional programs are provided for residents who desire in their first graduate year an experience in several specialties prior to embarking on further training in a single specialty. Institutions or consortia of institutions may offer a transitional year provided the following conditions are met:
>
> 1. An institutional committee, composed of representatives of the specialties providing training during the transitional

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§ This change was approved by the Accreditation Council for Graduate Medical Education in February 1981 for implementation in 1983.

year, should be responsible for the program development and evaluation.

2. A qualified director should be responsible for operating the program, counseling the residents, and coordinating their evaluation.
3. The year should be spent in an educational setting selected by the institutional committee for the transitional program, in cooperation with two or more accredited programs.
4. In most of their assignments the residents are associated with more senior residents in the participating specialties.
5. The impact of the training in the transitional year should not be deleterious to the quality of training of the residents in the provider disciplines.

The significant change in this proposal is that the responsibility for the development and operation of a first graduate year, consisting of education and training in several disciplines, is placed on the institution rather than upon only two or more programs. In effect this transitional year will be a rotating internship. The important differences from the rotating internship of the past are that there must be (*a*) at least two participating accredited residency programs, (*b*) a designated, qualified director, and (*c*) an institutional committee responsible for program development and evaluation.

(Conference discussants questioned where the transitional years would be located and how they would be structured. Some worried that transitional programs based in hospitals with large and complex specialty programs would be weak. Others felt that transitional programs in community hospitals would be disadvantaged.)

The new designations and the accreditation policies related to them will allow institutions considerable latitude in meeting the needs of their various sponsored programs. The requirement that transitional programs be limited to institutions that sponsor two or more accredited programs will more effectively ensure that the program is of acceptable quality. The Liaison Committee on Graduate Medical Education should encourage the development of transitional programs in institutions that have accredited programs in internal medicine, pediatrics, surgery, or other broadly-based specialties.

These proposed changes will require modifications of the National Resident Matching Program's matching system. Preliminary discussions indicate that the matching program can be modified to accommodate both Categorical programs and Transitional year programs. The likelihood that either students or programs will be inconvenienced by these changes can be minimized.

Conference Discussion

Dr. Kay Clawson reported for the six conference workshops of 67 individuals who discussed problems attendant to the transition from undergraduate to graduate medical education. Of primary concern in all the groups was preparing individuals with a broad base of medicine to enter specialty training programs. Accomplishing this in the final year of medical school, no matter how it is structured, is not possible for a number of reasons, one of which is that during this year students are away interviewing and assessing training programs. Some felt that the first graduate year should be the transitional, broad year in which students are exposed to a wide range of experiences before they start in specialty training unless they are choosing a broad-based specialty, such as family practice, general internal medicine, and general pediatrics. Finally, rather than focus on any single year, perhaps the emphasis should be on defining how students should perform when they graduate and afford maximum flexibility to the institution to prepare students to enter graduate medical education.

Dr. August Swanson pointed out that, according to 1980 findings, 94.4 percent of the students graduating from medical school enter graduate medical education. From this standpoint, medical students should be prepared to enter graduate medical education, not to enter the practice of medicine. Faculty members should examine undergraduate teaching programs in terms of what they want students to be able to do when they leave medical school and enter graduate medical education.

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Chapter 4

National Standards Formulation and Accreditation

Among Webster's definitions of the word "accredit," several might be said to apply to medical education at both the undergraduate and graduate levels (17):

> To put into a reputable or outstanding category; consider, recognize or acclaim as rightfully possessing an uncontested status; to give official authorization to or approval of; to vouch for officially, to recognize [an educational institution or program] as maintaining standards that render it eligible for membership in an association of similar institutions and that qualify its graduates for admission to higher or more specialized institutions or for professional practice.

In the United States accreditation of institutions or programs in higher education is conducted by a variety of voluntary agencies at both the national and regional levels. In medicine the responsibility for the accreditation of programs of medical education leading to the M.D. degree has, since 1942, been vested in the Liaison Committee on Medical Education, jointly sponsored by the American Medical Association and the Association of American Medical Colleges. This accrediting body is recognized by the U.S. Commissioner of Education in order that accredited medical schools may receive federal funds.

Responsibility for accreditation of programs in graduate medical education has only recently come under the aegis of the Liaison Committee on Graduate Medical Education. Representation in this body is from the American Medical Association, the Association of American Medical Colleges, the American Board of Medical Specialties, the Council of Medical Specialty Societies, and the American Hospital Association. The Liaison Committee on Graduate Medical Education has not sought recognition by the U.S. Commissioner of Education.

Accreditation in graduate medical education is a public trust, and its purposes are many:

1. It assures students who are selecting among programs that the programs have the necessary scope and meet the national standards established for education and training in a particular specialty.
2. It assures the programs' residents, who are the consumers of the educational process, that they are receiving education and training that are of high quality.
3. It assures the medical faculty, staff, and program directors, who jointly are responsible for the educational process, that the enterprise in which they are engaged is of high quality.
4. It assures institutional executives and governing boards that their sponsored programs meet acceptable national standards.
5. It assures certifying boards that the standards they require are being met by individual programs.
6. It assures funding agencies that the educational programs meet national standards and merit support.
7. It protects the public by assuring that the residents are provided education and training of high quality in programs that are well supervised by competent teaching staff.

In order to achieve and retain credibility, accrediting agencies must define and articulate clear standards against which an institution or program can be judged, employ a process that provides methods to determine whether the standards have been met, and be able to demonstrate that decisions to accredit or not to accredit are based solely upon whether the standards have or have not been met.

The system by which graduate medical education is now accredited was devised during the two decades between 1930, when 338 hospitals offered 2,028 residency positions and 5,496 internship positions, and 1950, when 1,079 hospitals offered 19,364 residency positions and 9,370 internship positions (18, 19). The present stress on this system can only be suggested when one considers that in 1976 a total of 1,702 hospitals had 65,046 residency positions in the United States (2).

In this chapter, the history of accreditation in graduate medical education is reviewed, its present status is assessed, and recommendations for its improvement in the future are discussed.

A System To Approve Residencies

In the first quarter of this century, graduate medical education varied from courses of a few weeks' or months' duration to residencies of several years' duration. Professional organizations of specialists did not support the short-course route to specialist status, and, as certifying boards evolved, residency training of several years' duration became the necessary prerequisite to designation as a specialist.

In 1927 the Council on Medical Education and Hospitals of the American Medical Association published a list of hospitals approved for graduate medical education. In 1928 the Council on Medical Education and Hospitals sent forward for approval by the American Medical Association House of Delegates basic standards for residency programs. These were promulgated under the title of *Essentials of Approved Residencies and Fellowships* (20). A regularized system of periodic review and approval by a body specifically designated as having the authority to set standards, to review, and to approve or disapprove hospitals and their training programs was not put in place until much later.

The American College of Surgeons, which from its inception was concerned with the quality of surgical training, began the development of a program to set the standards for surgical education in 1937, and in 1939 it published a list of hospitals in the United States and Canada approved for graduate education. At the same time, the college published a minimum standard entitled, "Fundamental Requirements for Graduate Training in Surgery." From 1937 until 1949 the college and the American Medical Association separately evaluated surgical training programs. A major difference was that the college recognized only programs of three or more years' duration, while the American Medical Association recognized programs that offered shorter periods of training as well. In 1950 the American Medical Association, the American College of Surgeons, and the American Board of Surgery joined together to develop the Conference Committee on Graduate Training in Surgery (20).

Meanwhile, in 1939 the American College of Physicians had begun a similar tripartite effort with the Council on Medical Education and Hospitals and the American Board of Internal Medicine. A conference committee, organized in 1940, began to review hospitals that offered training in internal medicine until World War II interrupted its activities. Plans begun in 1948 to reactivate the conference committee were completed and agreed to by the three participating organizations in 1949 (20).

The fundamental characteristics and operating policies of both the medicine and surgery conference committees were as follows:

1. Members of the committee were appointed by each participant.

2. The committees were given the responsibility to recommend educational standards.

3. Recommended educational standards had to be approved by each participating organization.

4. Decisions to approve or disapprove programs were made by the committees with no further review by the participating organizations.

5. Staffing services were provided by the American Medical Association, with a member of the staff of the Council on Medical Education and Hospitals serving as the secretary to the committee.

6. On-site surveys were conducted by the American Medical Association staff.

In 1953 the term "conference committee" was replaced by the term "residency review committee" (20). This title has persisted.

In 1952 the Council on Medical Education and Hospitals approached the other specialty boards and proposed establishing residency review committees to set their educational standards and review their training programs (20). By 1956 committees had been established in all the specialties except pathology, obstetrics-gynecology, and thoracic surgery (20). Their policies and modes of operation were similar to those that had evolved for medicine and surgery. Except for the surgical specialties and internal medicine, sponsorship of these residency review committees was limited to the American Medical Association and the specialty board. There were no sponsors from a specialty society.

At present, the sponsorship of residency review committees is still variable, with some having tripartite sponsorship and some bipartite. Organizations sponsoring residency review committees are shown in Table 4.1. The latest specialty to be designated, emergency medicine, is presently organizing a residency review committee. Its sponsorship has not been determined.

By 1970 the residency review committee system, staffed by the American Medical Association, was responsible for setting the standards and for reviewing and approving programs in graduate medical education in all specialties except pathology. The American Board of Pathology continued independently setting standards for and reviewing residencies in pathology until 1972, when it also joined the system.

In the late 1960s, as the federal government began to scrutinize graduate medical education and federal support for graduate medical education was foreseen as a distinct possibility, the American Medical Association explored the possibility that the U.S. Office of Education might recognize the residency review committee system as the accrediting agency for graduate medical education programs. The Office of Education indicated that recognition would be denied, principally because of the narrow representation on the residency review committees and their singular dominance by the American Medical Association. Stimulated by this criticism, the American Medical Association began discussions with other organizations that had a genuine interest in graduate medical education.

In 1972 the American Medical Association, the Association of American Medical Colleges, the American Board of Medical Specialties, the Council of Medical Specialty Societies, and the American Hospital Association established a pentapartite committee to be responsible for the accreditation of graduate medical education. It was agreed that, as a first order of business, this accreditation committee, the Liaison Committee on Graduate Medical Education, would seek official recognition by the U.S. Office of Education.

The five parent organizations of the Liaison Committee on Graduate Medical

TABLE 4.1

Organizations Sponsoring 22 Residency Review Committees, 1978–79

Residency Review Committees	Sponsoring Organizations
Allergy & Immunology	American Board of Allergy & Immunology (A Conjoint Board of the American Boards of Internal Medicine and Pediatrics) AMA Council on Medical Education
Anesthesiology	American Board of Anesthesiology AMA Council on Medical Education
Colon & Rectal Surgery	American Board of Colon & Rectal Surgery AMA Council on Medical Education American College of Surgeons
Dermatology	American Board of Dermatology AMA Council on Medical Education
Family Practice	American Board of Family Practice AMA Council on Medical Education American Academy of Family Physicians
Internal Medicine	American Board of Internal Medicine AMA Council on Medical Education American College of Physicians
Neurological Surgery	American Board of Neurological Surgery AMA Council on Medical Education American College of Surgeons
Nuclear Medicine	American Board of Nuclear Medicine (A Conjoint Board of the American Boards of Internal Medicine, Pathology, and Radiology, and also sponsored by the Society of Nuclear Medicine) AMA Council on Medical Education
Obstetrics-Gynecology	American Board of Obstetrics & Gynecology AMA Council on Medical Education American College of Obstetricians and Gynecologists
Ophthalmology	American Board of Ophthalmology AMA Council on Medical Education American Academy of Ophthalmology
Orthopaedic Surgery	American Board of Orthopaedic Surgery AMA Council on Medical Education American Academy of Orthopaedic Surgeons
Otolaryngology	American Board of Otolaryngology AMA Council on Medical Education American College of Surgeons
Pathology	American Board of Pathology AMA Council on Medical Education
Pediatrics	American Board of Pediatrics AMA Council on Medical Education American Academy of Pediatrics
Physical Medicine & Rehabilitation	American Board of Physical Medicine & Rehabilitation AMA Council on Medical Education
Plastic Surgery	American Board of Plastic Surgery AMA Council on Medical Education American College of Surgeons

TABLE 4.1 (Continued)

Residency Review Committees	Sponsoring Organizations
Preventive Medicine	American Board of Preventive Medicine AMA Council on Medical Education
Psychiatry & Neurology	American Board of Psychiatry & Neurology AMA Council on Medical Education
Radiology	American Board of Radiology AMA Council on Medical Education
Surgery	American Board of Surgery AMA Council on Medical Education American College of Surgeons
Thoracic Surgery	American Board of Thoracic Surgery AMA Council on Medical Education American College of Surgeons
Urology	American Board of Urology AMA Council on Medical Education American College of Surgeons

SOURCE: American Board of Medical Specialties. *Annual Report, 1977–78.* Evanston, Illinois: American Board of Medical Specialties, 1978.

Education also agreed to establish another group to be called the Coordinating Council on Medical Education.* The role of the Coordinating Council on Medical Education was to approve major policies not only of the Liaison Committee on Graduate Medical Education but also of the Liaison Committee on Medical Education, which had been accrediting undergraduate medical education since 1942. The Coordinating Council on Medical Education was also charged to form a liaison committee to accredit continuing medical education. The Liaison Committee on Continuing Medical Education, which was established in 1977, has only four sponsors since the American Medical Association withdrew as a sponsor in 1979.

Liaison Committee on GME

In the establishment of the Liaison Committee on Graduate Medical Education and the Coordinating Council on Medical Education, the parent organizations first reached five points of agreement:

> 1. As soon as possible, there will be established a Liaison Committee on Graduate Medical Education, with representation from each of the five organizations, to serve as the official accrediting body for graduate medical education.
>
> 2. Simultaneously, there will be established a Coordinating Council on Medical Education composed of representatives from each of the five organizations to consider policy matters for both undergraduate and graduate medical education for referral to the parent organizations.
>
> 3. The existing Liaison Committee on Medical Education and the new Liaison Committee on Graduate Medical Education will have the authority to make decisions on accreditation in their respective areas within the limits of policies established by the parent organizations and with the understanding that Residency Review Committees will continue to function.
>
> 4. All policy decisions will continue to be subject to approval by the parent organizations.
>
> 5. Policy recommendations may originate from any of the parent organizations or from the two liaison committees, but

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* Effective January 1, 1981, the Liaison Committee on Graduate Medical Education was reorganized and transformed into the Accreditation Council for Graduate Medical Education under the auspices of the same sponsoring organizations. Details of the reorganization are set forth in Appendix 1.

will be subject to review by the Coordinating Council before final action is taken by the parent organizations.

Subsequently, representatives of the five parent organizations met and agreed on a proposal for the Liaison Committee on Graduate Medical Education. The purpose and function of the Liaison Committee on Graduate Medical Education were specified in a proposal and agreed to and approved by the five parent organizations.

PURPOSE

A. To consolidate existing multiple accrediting activities in graduate medical education under a single accrediting agency qualified for recognition by the U.S. Commissioner of Education.

B. To establish a body for supervision and accreditation of graduate medical education comparable to that existing for undergraduate medical education.

FUNCTION

A. To accredit programs of graduate medical education recommended for approval by residency review committees.

B. To coordinate the development of improved review and evaluation procedures of residency review committees.

C. To establish more effective central administrative procedures for the conduct of accreditation in graduate medical education.

D. To develop and propose to the Coordinating Council on Medical Education policies and methods whereby graduate education programs in the various specialties may be related more closely to each other and to the total educational enterprises in their individual institutions.

E. To recommend studies directed toward improvement in the standards for organization and conduct of programs in graduate medical education.

The points of agreement and the expressed "Purpose and Function" indicate that all participants to the agreement that formed the Liaison Committee on Graduate Medical Education recognized the need to consolidate responsibility for accreditation of graduate medical education in one committee; and that committee was charged to improve the review and evaluation procedures and attain sufficient credibility as an accrediting agency so as to be recognized by the U.S. Office of Education. The stipulation in Point 3 that the residency review committees should continue to function and the requirement that policies established by the Liaison Committee on Graduate Medical Education would have to be approved by the Coordinating Council on Medical Education and each of its parent organizations indicates that it was not intended that the Liaison Committee on Graduate Medical Education be granted exclusive domain over the accreditation of graduate medical education.

The first organizational meeting of the Liaison Committee on Graduate Medical Education was held on December 18 and 19, 1972. In accordance with the articles of the proposal for its establishment, an annual rotation for the chairman was established with each parent organization appointing the chairman in turn. The staff to the Council on Medical Education of the American Medical Association was designated to provide staff support to the committee for the time being. In subsequent meetings a financing plan was developed and approved by the parent organizations. This plan stipulated that the American Medical Association defray one-half the cost of all accreditation activities conducted by the Liaison Committee on Graduate Medical Education and the residency review committees, that programs be charged for periodic review to generate revenue to support the evaluation process, and that costs not covered by these revenues be distributed among the five parent organizations. When its bylaws were approved by the Coordinating Council on Medical Education and its parent organizations in 1975, the Liaison Committee on

Graduate Medical Education began officially to accredit programs in graduate medical education.

According to the mode of operation established, residency review committees would continue to review programs in their specialties and recommend to the Liaison Committee on Graduate Medical Education whether programs should be accredited, not be accredited, or be placed on probation. The Liaison Committee on Graduate Medical Education, after reviewing the documentation of each residency review committee decision, would then issue a letter advising the director of the accreditation status of the program.

When the Liaison Committee on Graduate Medical Education began examining the procedures and records of each residency review committee, it became apparent that, although the Council on Medical Education was represented on each residency review committee and staff support to each residency review committee was provided by the American Medical Association, residency review committee policies and procedures were inconsistent, and communication among residency review committees was essentially nonexistent. Instances in which programs had been on probation year after year were found frequently, and it was not uncommon to find several programs in the same hospital on probation simultaneously. These inconsistencies in policy and procedures and organizational isolation among the residency review committees were considered to be important areas on which the Liaison Committee on Graduate Medical Education should exert its first efforts in accomplishing its purpose and function. Of equal or greater concern to the Liaison Committee on Graduate Medical Education was the finding that the documentation of the reasons for residency review committee approval or disapproval of a program was frequently lacking or that the written record often supported a decision opposite to that recommended by a residency review committee.

A manual of "Structures and Functions" setting forth policies and procedures to be followed by all residency review committees was developed. These included policies related to the type of accreditation status that could be designated. Particular emphasis was placed on probationary status, which was limited to four years with a review required after a program had been on probation for two years. A policy was established that the accreditation status of programs, including probation, was public information, and the staff was directed to inform deans of medical schools of the accreditation status of programs in hospitals affiliated with the school. The residency review committees were asked to state their reasons for making a decision in the record of their meetings and provide this record to the Liaison Committee on Graduate Medical Education.

These actions and others by the Liaison Committee on Graduate Medical Education were not well received initially by the residency review committees. Accustomed to operating independently, each with its own approaches to review and evaluation, the residency review committees viewed the Liaison Committee on Graduate Medical Education as an alien group, superimposed upon them.

In an effort to improve communications and understanding, residency review committee chairmen initially were invited to attend the sessions of the Liaison Committee on Graduate Medical Education meetings during which their committee actions were to be reviewed, and later an annual meeting of all residency review committee chairmen was organized for the purpose of discussing policy development.

These meetings with the chairmen revealed that they were also concerned about the quality of information that they had available and were particularly frustrated by the unreliable survey reports that the field staff supplied.

Early in the operation it was apparent that the Liaison Committee on Graduate Medical Education was extremely dependent on the staff to carry out its purpose and function. Experience demonstrated that the American Medical Association staff was not singularly dedicated to the Liaison Committee on Graduate Medical Education and dealt with its needs as tasks added to their other responsibilities to their employer. In 1976 discussions to improve staff support were begun within the Liaison Committee on Graduate Medical Education, and in 1977, after the Association of American Medical Colleges, the American Board of Medical Specialties, and the Council of Medical Specialty Societies issued resolutions calling for staffing of the Liaison Committee on Graduate Medical Education independent of any other parent organization, the Liaison Committee on Graduate Medical Education asked that the parent organizations appoint a commission to investigate the staffing problem and to recommend change.

The Past Linked to the Future

The development of a system to approve residencies began in an era when graduate medical education for most graduates of U.S. medical schools consisted of a one-year rotating internship. Hospitals offering residency programs were few, and the number of residents was small.

As can be seen in Appendix 2, graduate education has grown enormously in both the number of hospitals participating and the number of positions offered. Graduating medical students now expect to be residents for three or more years after graduation, and, in 1979, 93.2 percent of the U.S. graduating class responding to a survey conducted by the Association of American Medical Colleges indicated that they expect to seek certification by a specialty board (8).

Medical education has become a two-phased process: the first phase prepares students for graduate medical education, and the second phase prepares students for independent practice and certification by a specialty board. Because of these changes, the accreditation of graduate medical education is significantly more complicated and more difficult to do well than it was when only a fraction of U.S. physicians sought specialty training in a small number of hospitals.

However, the accreditation system which is operating now is based upon two principles that evolved between 1930 and 1950 (20): residency review committees should be composed exclusively of individuals in the same specialty, and the graduate program is the educational unit to be approved.

Although the standards for training programs in each specialty, as set forth in the Special Requirements section of the "Essentials of Accredited Residencies," are reviewed and approved by the Council on Medical Education, in its capacity as the sponsor of each residency review committee, and by the Liaison Committee on Graduate Medical Education, they are conceptualized in isolation from educators in the other specialties (21). The Liaison Committee on Graduate Medical Education has recently required that proposed changes in the Special Requirements be accompanied by a statement regarding the impact that these modifications will have on other disciplines and institutional resources. This is a beginning toward achieving the goal of having the various specialties recognize their interdependence.

An analysis of the information requested from programs in the process of being reviewed for accreditation demonstrates that most residency review committees pay little attention to the total educational environment in which programs reside (see Appendix 13). Only four ask whether or not there are other graduate programs in the institution, and only two of these ask about the accreditation status of the other programs. This isolation of the residency review committees from meaningful contact with other specialties and their singular focus on program accreditation without regard to the total educational setting must be viewed as a heritage of the early era of graduate medical education evaluation and approval when there were few programs and a small number of residents. For the future, an accreditation system must be developed consistent with "Function D" as specified in the articles of agreement for the Liaison Committee on Graduate Medical Education: "To develop and propose to the Coordinating Council on Medical Education policies and methods whereby graduate education programs in the various specialties may be related more closely to each other and to the total educational enterprises in their individual institutions."

Improving Accreditation

Changes in the accreditation of graduate medical education should be based on the following recommendations:

> *The purposes of graduate medical education accreditation should be (a) to establish current standards that will ensure acceptable educational quality and (b) to enhance progressively the level of quality of graduate medical education in the United States.*

Accreditation, by setting standards that must be met, achieves its major purpose of ensuring that programs are of acceptable quality while concomitantly ensuring that an acceptable level of patient care is maintained. It thereby protects the interests of students, residents, institutions and their faculties and staff, certifying boards, supporting agencies, and the public. Through constant attention to ensuring that standards are consistent with the changing educational needs of residents and by constantly reexamining the policies and procedures for review and approval of programs, the residency review committees and the Liaison Committee on Graduate Medical Education should, in the future, make accreditation play a significant role in the progressive improvement of all aspects of graduate medical education.

> *Programs in graduate medical education should continue to be reviewed and approved by residency review committees and accredited by the Liaison Committee on Graduate Medical Education.*
>
> (Conference discussants considered this recommendation in light of the announced intention to allow residency review committees a role of delegated autonomous authority in this process. It was felt that most residency review committees would move promptly to seek autonomy and that an early need would be for a clear statement of policy describing the criteria for granting such autonomy, the methods of monitoring performance, and the performance and the procedures necessary for considering a reversal of this process.)

Residency review committees have two functions. They develop the standards (Special Requirements) that programs must meet to achieve accreditation, and they review and judge whether programs that seek approval for accreditation have met these standards.

> *The Liaison Committee on Graduate Medical Education should continue to approve the Special Requirements, review residency review committee actions, and accredit programs.*
>
> *A specialty board should not be the sole sponsor of a residency review commit-*

tee, nor should a professional organization with direct representation on the Liaison Committee on Graduate Medical Education be a sponsor.

(Conference discussants accepted the first part of this recommendation, but the second part, "nor should a professional organization with direct representation on the Liaison Committee on Graduate Medical Education be a sponsor," stimulated extended discussion with divergent opinions. Representatives from two disciplines supported the recommendation as written. There was a general perception that the present two-level role of the American Medical Association—as a residency review committee sponsor and as a parent of the Liaison Committee on Graduate Medical Education—represented an asymmetry in the organization of the accreditation process in graduate medical education. Some felt that most residency review committees would be extremely reluctant to relinquish or to alter the American Medical Association sponsorship. Several strongly defended the record of the American Medical Association and urged continuation of the present alignment.)

As shown in Table 4.1, residency review committees have a bipartite or tripartite sponsorship. A specialty board and the American Medical Association are sponsors of each of the 22 residency review committees. In 14 cases a major national professional specialty society is also a sponsor. Because of its sponsorship and supervision of each residency review committee and its direct representation on the Liaison Committee on Graduate Medical Education, the American Medical Association has the power to influence accreditation policies at two levels. First, in its capacity as sponsor, it acts to approve or disapprove each residency review committee's Special Requirements, and then it participates in approval or disapproval of the Special Requirements by the Liaison Committee on Graduate Medical Education. The American Medical Association should continue as a parent organization of the Liaison Committee on Graduate Medical Education but should relinquish its sponsorship of the residency review committees. Specialty boards not presently having a national professional specialty society as a cosponsor of the residency review committee for their specialty programs should seek such a cosponsorship. The cosponsoring society's membership should permit an enhanced representation from medical education as well as from physicians practicing the specialty.

Each residency review committee should be composed primarily of individuals who are specialists in the discipline and educators.

(Some conference discussants felt the word "educators" should be defined.)

The practice of having a residency review committee for each specialty composed of specialists in that clinical discipline who are also involved in education is basically sound.

The Liaison Committee on Graduate Medical Education should be composed of an equal number of representatives from each of its parent organizations. The selected representatives should have significant involvement in graduate medical education. Public membership should be expanded.†

The current and proposed representation in the Liaison Committee on Graduate Medical Education appears in Table 4.2.

The Liaison Committee on Graduate Medical Education membership should be increased in order to provide equal representation from all five parent organizations. A total membership of 20 representatives from the parent organizations, plus two public members, a resident member,

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† The proposed revision of the accreditation system will accomplish most of this recommendation. See Table 4.2.

TABLE 4.2

Liaison Committee on Graduate Medical Education Membership

Representation From	Number of Representatives	
	Current	Proposed*
Association of American Medical Colleges	4	4
American Board of Medical Specialties	4	4
American Medical Association	4	4
American Hospital Association	2	4
Council of Medical Specialty Societies	2	4
Federal Government (Department of Health and Human Services)	1	1
Public	1	2
Resident	1	1
Total	19	24

* In this column is shown the number of representatives proposed by the Association of American Medical Colleges. The reorganization of the Liaison Committee on Graduate Medical Education, which resulted in the establishment of the Accreditation Council for Graduate Medical Education, provided for the proposed representation except that there is only one public member and the federal member is nonvoting.

and a federal member would provide the diverse representation that is needed.

At present the chairmanship of the Liaison Committee on Graduate Medical Education is rotated among the five parent organizations annually. Each organization, in turn, designates which of its representatives will be chairman. Annual changes in leadership inhibit continuity of policy and program development. Designation of the chairman by the parent organizations denies the Liaison Committee on Graduate Medical Education the opportunity to select from among its members the individual who has demonstrated interest and the greatest talent for leadership. The chairman of the Liaison Committee on Graduate Medical Education should be selected by its membership. The Liaison Committee on Graduate Medical Education should recommend to its parent organizations the length of the term to be established for the chairmanship.

The Liaison Committee on Graduate Medical Education and residency review committees should have a single, capable professional staff of sufficient size. The staff should be solely dedicated to the Liaison Committee on Graduate Medical Education and the residency review committees and be responsible to no other agency or organization.

(This recommendation was discussed in light of reports of greatly improved staff function in recent months, in light of the search for a new secretary, and in light of the announced intention of the American Medical Association to review the functions of the staff after 18 months. Because of these rather unexpected events, it was generally felt that the possible development of an independent staff should remain on the record rather than be a recommendation for action at present.)

The growth in size and complexity of graduate medical education has reached the point that its effective accreditation requires a competent and skilled full-time staff. In the future, a staff selected by the Liaison Committee on Graduate Medical Education and dedicated solely to serve its needs and those of the residency review committees should be organized to manage the accreditation process and to implement policies. The physical location of the staff and the facilities for conducting this activity should promote cohesion among its members and facilitate interaction among the staff and the Liaison Committee on Graduate Medical Education and residency review committee representatives. The staff director should report to the chairman of the Liaison Committee on Graduate Medical Education. The director should be an individual with a depth of experience in medical education, capable of managing the personnel and financial affairs of the organization, and qualified to assist the leadership in the continued improvement of the accreditation system and process.

An executive committee composed of one representative designated by each of the five parent organizations should be established to assist the chairman in the conduct of Liaison Committee on Graduate Medical Education business.

Direct communication between residency review committees and the Liaison Committee on Graduate Medical Education should be continued and expanded.

(Conference discussants unanimously supported this recommendation. In the proposed reorganization, chairmen of residency review committees will have regular access to the agenda of the Accreditation Council for Graduate Medical Education. Their views can, therefore, be considered at the meetings.)

The practice of having residency review committee chairmen attend the Liaison Committee on Graduate Medical Education meetings when the actions of their committees are reviewed should be continued, and the annual meeting of the residency review committee chairmen with the Liaison Committee on Graduate Medical Education should be continued and expanded in content. This meeting should be used to catalyze the studies directed toward improvement in the standards for organization and conduct of programs in graduate medical education which are required in "Function E" of the Liaison Committee on Graduate Medical Education. Residency review committee chairmen, assisted by the professional staff, should have a major responsibility to inform their committee members of the general issues and problems in the accreditation of graduate medical education and interpret Liaison Committee on Graduate Medical Education policies both to the members and to their participating organizations.

Assessment of the overall educational setting should receive greater attention in evaluating programs in the future than it has in the past.

In developing or modifying their Special Requirements in the past, residency review committees have not consulted sufficiently with other residency review committees or with other specialists whose educational programs complement or support their own. When a residency review committee begins planning to change its Special Requirements, early consultation should be sought with other disciplines. One mechanism would be to establish a subcommittee composed of residency review committee members and selected consultants from other disciplines.

The amount of information available to residency review committees about the characteristics of the institutions sponsoring programs being reviewed by each residency review committee should be increased and the quality of the information should be improved. The Liaison Committee on Graduate Medical Education and the residency review committees should become better informed about the relationship between institutional characteristics and program quality.

The formulation of the Special Requirements developed by the residency review committees should be based on clearly stated educational criteria. These should focus on the total edu-

cational setting, as well as on the specific requirements for each clinical discipline. Insofar as possible, the Special Requirements should follow a common format.

As presently published in the "Essentials of Accredited Residencies," both the General and Special Requirements are so general and vague that it is difficult to measure whether or not an institution or program is in compliance with the standards (22). Some residency review committees have published "guides" that are alleged to be only advisory but that often appear to contain criteria that go beyond the published requirements. Special Requirements vary in their organizational format and degree of specificity. All residency review committees should rewrite their Special Requirements using a common format.

(While conference discussants generally supported the suggestion that Special Requirements use a common format, the suggested guidelines were considered as being too detailed and as emphasizing process over the evaluation of quality. The Liaison Committee on Graduate Medical Education had modified the guidelines and had distributed them to the residency review committees as a suggested format.)

The following are some suggested topics to be addressed by residency review committees in developing Special Requirements:

Description of position of program director—Length of appointment; responsibilities such as evaluations, conferences, and rounds; time to be devoted to responsibilities, that is, full-time or part-time; and qualifications such as board certification, experience in teaching residents, and professional activities.

Qualifications for teaching staff—Board certification or eligibility; teaching experience; research experience; and special patient care experience.

Guidelines for supervision of residents—Faculty/resident ratio necessary for residency; guidelines for supervision of procedures; and guidelines for residents writing orders.

Program requirements—Previous education necessary for residents entering program; length of residency; other graduate programs that must be present; rotations on other services; length of time on other services; ambulatory clinical experiences; rotation in special units; laboratory experiences; basic science education; competence in certain diagnostic procedures; mix of patients; educational conferences, educational advisory committee; research; and publications.

Description of resident responsibilities—Keeping patient logs or operation record; patient care; and teaching medical students or junior residents.

Requirements for an evaluation system—Appropriate intervals for evaluating resident performance; guidelines for providing graduated responsibility; record-keeping system for resident evaluations; in-training examinations; evaluations that must be provided by the program director to the specialty board; and process for dealing with residents who do not meet minimum standards.

Guidelines for affiliation with other institutions—Medical school affiliation; integrated or affiliated programs; and rotations in other settings.

Facilities—Laboratories; office space; library; on-call rooms; and equipment.

In this endeavor, each residency review committee should seek to be sufficiently specific so that the criteria that programs must meet in the aggregate are clear and assessable, but it should avoid being so narrowly specific that a program might be disqualified for failing to meet every criterion precisely. Special Requirements should not force all programs into a common mold, nor should they inhibit responsible innovation. In instances where residency review committees are contemplating Special Requirements that will place demands on other disciplines, early consultation should be sought from knowledgeable individuals within the affected disciplines.

> *Site surveys of an institution's programs should be conducted by teams composed of knowledgeable physician specialists who are involved in medical education, assisted by a professional staff capable of collating and systematically organizing information.*

(This recommendation was made at a time when the field surveys had become inadequate, staff support disorganized, and the system in a state of near breakdown. Discussions from many sources revealed a turnaround in performance. Job descriptions for surveyors have been changed, training programs have been started, and from a number of disciplines there is support and even enthusiasm for the new level of field surveyor function. In this context, many discussing this recommendation felt that the justification for a new system of team site visitors is no longer present, that it would be prohibitive from a cost standpoint, and that team quality would be difficult to sustain. The extent of support for this recommendation, therefore, was limited to the suggestion that it might be tried as a pilot project and the results studied. It was felt that, in any event, team surveys would not be applicable to all settings.)

Site surveys are presently conducted either by field staff or by specialist site visitors. The field staff surveyors are essentially responsible only for verifying whether or not the information provided by a program is accurate. Specialist site visitors are assigned to survey a program when a residency review committee is concerned about a program's inability to comply with its standards. In the case of the American Medical Association's field staff survey, little reliable information is gained regarding the actual quality of the education being provided to residents. Specialist site visitors provide more reliable insights into the subtleties of the strengths and weaknesses of a program. In neither case does the residency review committee gain an appreciation of the total educational environment being provided by the sponsoring institution.

In the future, the itinerant field surveyor system should be abandoned. The predominant mode should be that teams of knowledgeable specialists involved in medical education should make periodic surveys of all of the programs in an institution or in a manageable geographic area. Teams should be composed of those specialists best suited to evaluate the constellation of programs to be reviewed. Institutions should be consulted in advance regarding whether or not there is need for special attention to specific programs. The survey visitors should be assisted by a professional staff who are capable of collating and systematically organizing information. Individual specialist site visitors should be used when a team visit is not practicable.

The purpose of team surveys is to improve the review process by improving the quality and increasing the quantity of information available to residency review committees and the Liaison Committee on Graduate Medical Education. It is not intended that the reviewers recommend accreditation of an institution in lieu of approval of each specialty program by the respective residency review committee. Reports should be prepared by the professional staff, reviewed and approved by the team chairman, and provided to each residency review committee responsible for approving a program sponsored by the institution. The report should include an assessment of the institution's compliance with the General Requirements, as well as an assessment of compliance with the residency review committee's Special Requirements.

> *Data collection and program review by residency review committees should focus on determining whether the General and Special Requirements have been met. Only criteria and concepts published in the General and Special Requirements should be utilized in determining a program's compliance with the standards set forth.*

At present, each residency review committee is utilizing pre-survey data collection forms that were developed years ago and that have been modified at irregular intervals. The data requested may or may not have an identifiable relationship to a residency review committee's Special Requirements. No data collection instrument is directed toward determining whether sponsors of graduate programs are in compliance with the General Requirements. In the future, data forms should be changed to reflect modifications in the General and Special Requirements. Required information should be that needed to determine whether a program is in compliance with the standards set forth in the Special Requirements and whether the program's sponsor is in compliance with the General Requirements. The Liaison Committee on Graduate Medical Education should collect uniformly and provide to each residency review committee data related to the General Requirements and data of common utility to all residency review committees.

> *The frequency of review and approval of programs should be determined by their need for modification and improvements. Sound programs in supportive educational settings should be reviewed relatively infrequently as compared to new programs or programs with deficiencies requiring correction.*

For many years the period for survey of graduate medical education programs was set at three years. Recently, the period has been extended to four years. The performance history of a program or institution has not been considered significantly in determining the frequency of survey and review by a residency review committee, although programs considered to be in serious difficulty or on probation are surveyed at more frequent intervals at the request of residency review committees. In the future, using the team system described above, surveys of all the programs sponsored by an institution should be conducted with a periodicity of six or more years. Specific programs found to be in difficulty at the time of a team survey should be required to submit progress reports that delineate ways in which deficiencies are being rectified, and, as necessary, the programs should be surveyed on an interim basis by a specialist site visitor who is charged with the responsibility of reporting on the program's progress. In unusual circumstances, when an entire institutional complex of programs is considered marginal, an interim team survey should be scheduled. A system for evaluating interim reports and for alerting residency review committees to significant changes in a program should be developed.

> *Necessary changes in both the General and Special Requirements of the "Essentials of Accredited Residencies in Graduate Medical Education" should be accomplished expeditiously through the clear definition of the role, responsibility, and authority of the residency review committees, the sponsors of residency review committees, the Liaison Committee on Graduate Medical Ed-*

ucation, the Coordinating Council on Medical Education, and its parent organizations. Procedures should be developed to resolve disputes and differences so that needed changes will not be inhibited or inordinately delayed.

(Under the proposed plans for reorganization, some of the old problems are likely to disappear, while time will be required to identify the agenda of difficulty under the new alignment. One specific suggestion that came out of conference discussion groups was that definitive time frames of response be required on policy issues for sponsors of residency review committees. This would be consistent with the announced changes for the parent body and the Accreditation Council for Graduate Medical Education.)

The standards for accreditation of programs in graduate medical education must be changed periodically in order to keep pace with the growth in biomedical knowledge and technology and the evolution of educational procedures and policies. Timely modifications in the General and Special Requirements have been difficult to accomplish because gaining the approval of all organizations involved has required so much time and effort.

From their inception, the residency review committees and the Liaison Committee on Graduate Medical Education have had the responsibility to consider recommendations for changes in the standards for graduate medical education and to draft revisions of the "Requirements" which are then referred to their sponsoring organizations. This role should be continued.

The sponsoring organizations of the residency review committees should continue to have the authority to approve revisions of their Special Requirements, and the parent organizations of the Liaison Committee on Graduate Medical Education should continue to have the authority to approve the revisions of the General Requirements. Procedures should be developed that will ensure a review of proposed revisions on a reasonable schedule.

There should also be a means to resolve disputes. Procedures for settling disputes should provide for increased communication among the organizations and the participation of their key representatives in direct debate.

For revisions in the Special Requirements, the residency review committees should be the forum in which the sponsoring organizations come together to consider differences and effect compromises so that approved changes may be forwarded to the Liaison Committee on Graduate Medical Education for final approval. The Liaison Committee on Graduate Medical Education should base its judgment of changes in Special Requirements on their conformity to the General Requirements and their impact on the broad interests of graduate medical education.

For revisions in the General Requirements, the Coordinating Council on Medical Education should be the forum in which differences among the five parent organizations of the Liaison Committee on Graduate Medical Education are resolved.

The cost for review and evaluation should be borne principally by the programs and their sponsoring institutions. Collateral costs of the Liaison Committee on Graduate Medical Education and residency review committees should be borne equally by the parent organizations of the Liaison Committee on Graduate Medical Education.

The source of financial support for accrediting agencies varies. In medicine, the costs of accreditation traditionally have been borne by national professional organizations. Until the formation of the Liaison Committee on Graduate Medical Education, the American Medical Association underwrote essentially all of the costs of the accreditation of graduate medical education, and the American Medical Association and the Association of American Medical Colleges continue to bear the costs of the medical school accreditation activities of the Liaison Committee on Medical Education. At present, the American Medical Association pays one-half of the costs generated by the Liaison Committee on Graduate Medical Education and the residency review committees in their review, approval, and accreditation activities. Revenues derived from charges to programs for surveys and residency review committee reviews provide a substantial amount toward the remaining one-half of costs, and the five parent organizations share the balance equally.

In the future, no single parent organization should bear a disproportionate share of the cost of graduate medical education accreditation. Costs should be recovered primarily from revenue generated through charges to programs and institutions. Costs to the parent organizations should be limited to those necessary to support their representative's attendance at scheduled meetings of the Liaison Committee on Graduate Medical Education. The graduate medical education system in the United States is complex, and it involves a diversity of programs and institutions which differ in size and in the demands they place on the accreditation system. An equitable formula of charges should be developed that takes into account this diversity.

Conference Discussion

Dr. Gordon Douglas reported for the six conference workshops of 109 individuals who discussed national standards formulation and accreditation. Observations from these groups are presented throughout this chapter.

Working Group on National Standards Formulation and Accreditation of Graduate Medical Education

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Chapter 5

Specialty Distribution And Graduate Medical Education

Specialization in medicine has paralleled the growth of specialization in all fields. Specialized and limited occupations are now commonplace. Two generations ago a bachelor's degree was considered the final degree for most individuals entering a field that required higher education. Now master's and doctoral degrees are often required. This trend toward specialization, which is a response to the extraordinary expansion of knowledge and technology during the 19th and 20th centuries, will continue in all areas of human endeavor. New knowledge, new concepts, and new technologies will, in the future, create demand and opportunities for ever more concentrated human activity.

Specialization in medicine has been accepted widely because the public believes that physicians who have acquired knowledge and developed skills in a particular field can diagnose problems more accurately and treat patients more effectively than can those physicians who have not so concentrated. Since 1917, when the first American medical specialty board was established, a total of 23 specialty boards have emerged (Table 5.1). Additionally, branching into fields of concentration within these specialties has led to the development of numerous subspecialties. The continued advance of specialized fields of knowledge and practice can confidently be predicted, as can the increasing benefit of this trend to the quality of the nation's health care.

To the public, however, most of whom will eventually seek medical care, the salutary growth of specialization has been accompanied by two problems.

1. Some have found it difficult or even impossible to locate physicians who will provide, supervise, and integrate their health care. As specialization has grown to keep pace with the expansion of knowledge and technology, coordination of the contributions that multiple specialists can make has become increasingly complex. In response to this a demand has risen for an increased number of primary care physicians whose styles of practice and special abilities include the provision of continuity and integration in the care of their patients. This reflects the desire of patients to have physicians who are their personal health advocates. It is not a denial of the desirability of specialization or of specialists who practice as consultants, as is often suggested.

2. The other problem the public has experienced is the burgeoning cost of health care that has accompanied the discovery of new knowledge and the development of new technology. The number, diversity, frequency, and unit costs of health care encounters have all increased. The enormous increase in the use of diagnostic and therapeutic procedures has been singled out as a major argument for the curtailment of the numbers of physicians who may enter graduate medical education in certain specialties and subspecialties.

Thus, the central issues of what is com-

TABLE 5.1

Establishment of American Specialty Boards

Board	Year Established
Ophthalmology	1917
Otolaryngology	1924
Obstetrics & Gynecology	1930
Dermatology	1932
Pediatrics	1933
Orthopaedic Surgery	1934
Radiology	1934
Psychiatry & Neurology	1934
Urology	1935
Colon & Rectal Surgery	1935
Internal Medicine	1936
Pathology	1936
Surgery	1937
Anesthesiology	1938
Plastic Surgery	1939
Neurological Surgery	1940
Physical Medicine & Rehabilitation	1947
Preventive Medicine	1948
Thoracic Surgery	1950
Family Practice	1969
Allergy & Immunology	1971
Nuclear Medicine	1971
Emergency Medicine	1979

monly called the specialty distribution problem are how to provide an appropriate balance of generalists and consultant physicians and how to ensure appropriate use of technology by physicians in practice. To address these issues effectively, conjoint study and action by the medical schools, teaching hospitals, and accrediting and certifying bodies, together with other private and public agencies, must replace the laissez-faire and even adversary relationships that have sometimes existed among them during the advance of specialization. Specialization in medical practice and the quality of medical services provided to the citizens of the United States are inextricable. In its effort to improve the quality of medical services, the profession must be concerned about the types and numbers of physicians that are being prepared for practice. Even greater attention should be directed toward an examination of the ways in which various kinds of physicians employ their knowledge and skills once they are in practice.

Changing the number and types of opportunities for education and training in graduate medical education alone will have little effect on the quality of medical practice. Satisfactory quality in medical practice is attained when patients who seek care are both diagnosed accurately and treated effectively. To the degree that technological procedures are underutilized, overutilized, or poorly performed, quality also declines. Changes in the mix of specialists and the attributes of physicians being prepared during the graduate phase of medical education must be accompanied by adjustments in economic incentives to make them commensurate with the desired mix of types of practitioners and by professional initiatives to ensure the highest quality of medical practice. These policies must be complementary.

All those involved in the education and training of physicians must concern themselves with questions of licensure, board certification, and practice privileges of physicians in reasonable numbers; with locations of physicians; and with compensation of physicians and health institutions for services. The challenge to both the medical education system and the health care system is to provide the manpower and resources for both continuing, comprehensive care and highly specialized services of high quality, together with measures of their efficacy and costs.

In planning for changes to resolve the issues that accompany specialization and the characteristics of medical practice, seven goals are identified toward which the medical education system, the practicing profession, and public and private agencies should strive. They encompass the balance between generalist and specialist medical services, the analysis of manpower needs, the role of undergraduate and graduate medical education, the incentives that shape medical practice, and the relationship between academic medicine and government. Only through the achievement of these interrelated goals will needed improvements be possible.

Physicians for Comprehensive Care

> *Goal 1*—A plurality of physicians educated and trained in the United States should be prepared to care for patients on a continuing and comprehensive basis. They should depend principally upon their fundamental knowledge and basic clinical skills and make decisions to request specialized techniques and procedures judiciously. They should be skilled in selecting and working with other health professionals, health agencies, and special consultants.

In a high quality medical practice, physicians are challenged to provide empathetic care to patients who usually have relatively simple problems and to remain alert for symptoms and signs that may signal the need for specialized interventions. All physicians, most particularly primary care physicians, must fulfill this responsibility. The term "generalist" best describes these physicians, and it distinguishes them from those who serve as consultants in narrow, specialized fields. Family physicians, internists, and pediatricians usually serve as generalists. For women in their child-bearing years, obstetricians frequently serve as generalists. However, physicians with subspecialty training in medical specialties also serve as generalists, particularly for patients with chronic diseases. Throughout their education and training, students and residents who plan careers that will involve them in continuing, comprehensive care should have five primary aims:

1. Attainment of broad medical knowledge and the ability to collect information about patients through interview, examination, and selection of appropriate laboratory tests and procedures.
2. Attainment of the ability to integrate their observations in order to make accurate diagnoses and select appropriate treatment.
3. Attainment of the ability to provide patients with comprehensive, ongoing care and treatment for a variety of physical and emotional problems.
4. Attainment of the ability to reassure, console, and make patients as comfortable as possible with the uncertainties and limitations that disease may impose.
5. Attainment of the ability to select and participate with other health professionals, health agencies, and special consultants in the continuing care of patients who require specialized services.

Graduate medical education programs for those in the fields of family practice, internal medicine, obstetrics-gynecology, and pediatrics should be organized to afford a balanced opportunity for education in both ambulatory and hospital settings. In both sites, significant opportunities to learn with and from physicians in various specialties and subspecialties should be provided so that the residents may develop the ability to recognize the need for specialized care and to serve patients as advocates and counselors in the selection of consultants. Establishing an educational environment and an institutional milieu that will attract and retain physicians who must fulfill such a broad role is difficult. To be effective, an ambulatory educational setting must provide a wide spectrum of patients, and the residents must be allotted adequate time in which to study their patients' problems and learn to care for them. Such an ambulatory setting requires careful preparation, and it is costly compared with ambulatory clinics that are not engaged in education.

The organization of clinical units in many teaching hospitals is dictated by the need to provide medical and nursing services to patients who require very specialized care. This pattern of organization, which provides for effective specialized patient care and is appropriate for education about complex diagnostic and therapeutic problems, is often incompatible with education about the diverse, interactive problems patients present to the generalist. Reorganization of services or preparation of alternative educational settings may be needed. This can be achieved only after extensive negotiations and the dedication of appropriate resources.

The role of residents in the generalist phase of their education and their relationships with other specialists and with subspecialists in their own discipline during graduate medical education deserve particular attention. Only through deliberate and conscious efforts will the professional, social, and economic gaps that have come to exist in both education and practice be narrowed. These should start during graduate medical education.[7]

> *The emphasis on providing graduate medical education programs in family practice, internal medicine, obstetrics-gynecology, and pediatrics that stress the role of the broadly educated and trained generalist should be continued.*
>
> *Resources should be provided, both through special educational grants and through a change in reimbursement policies, to promote the development and maintenance of adequate ambulatory educational settings as detailed in the chapter on financing graduate medical education.*
>
> *In both ambulatory and hospital educational settings, generalist and specialist residents should learn to work together and gain knowledge of ways in which each can contribute most effectively to the provision of medical care to patients who have diverse problems and needs.*

Providing Specialized Services

> *Goal 2* Specialized services and procedures should be provided only by physicians with the requisite education, training, and competence. Physicians specializing in fields requiring the maintenance of high-level technical skills should be engaged primarily in the practice of their specialties. Generalist physicians subspecializing in an area of their primary specialty should use their breadth of knowledge to provide continuing and comprehensive as well as subspecialized care.
>
> (Conferees were disturbed by possible misinterpretations of this goal. They expressed concerns that it might be interpreted as supporting limited licensing by specialty. The final sentence, which acknowledges the role that generalists with subspecialty education may play in providing continuing, comprehensive care, was added in response to conference discussions.)[1]

The purpose of specialization in medical practice is to provide medical services of a quality commensurate with current knowledge and technology to patients who have medical problems that require specialized intervention and care. Providing specialized services of this quality requires the education and training of specialists and subspecialists in a growing number of areas of concentration. If, however, the numbers prepared to practice specialized medicine exceed the need for specialized services, three unwanted outcomes result. First, specialists, even though thoroughly prepared during their graduate medical education, may not be sufficiently engaged in practicing their specialty to maintain their proficiency. Second, specialists may excessively apply their knowledge and skills to the patients they do see with problems in the realm of their specialty. Third, specialists may extend their scope of practice into areas for which they are not prepared. The quality of medical practice is thereby impaired. Although in some areas generalists may be called upon to deliver specialty services when qualified specialists may not be available, the quality of medical practice can be impaired if physicians with insufficient education and training routinely try to provide specialized services.

Achieving a consensus on the number of specialists and subspecialists to be prepared will be difficult, perhaps impossible. The present emphasis on increasing the number of generalists may be overshadowing future shortfalls in other disciplines. Medicine is not static. New knowledge and new technology will require the preparation of new types of specialists as the ability of physicians to diagnose and treat disease is advanced through research. For this reason, estimating the numbers and kinds of specialists that should be educated and trained for the future is difficult. In the United States, the application of specialized knowledge and techniques is not restricted to physicians who are prepared as specialists. This makes impossible a determination of whether or not specialists who are prepared to enter practice will have opportunities to utilize their knowledge and skills to the fullest extent. In the discussion of Goal 6, the great economic incentives to apply procedures excessively in the practice of medicine are stressed. Procedures, when applied by physicians who are not fully prepared to assess their appropriateness or effectiveness, are likely not to be of benefit and can be harmful as well as costly.

In estimating the need for specialists, roles that various specialties play in the practice of medicine must be differentiated. For example, physicians prepared as diagnostic radiologists expect to and are expected to provide skillful application of the complex technology of radiographic imaging to meet the diagnostic and management needs of their patients. They are not expected to provide continuing, comprehensive care to patients. Similarly, surgeons are expected primarily to assess the need for surgical intervention, to be skillful operators, and to deliver preoperative and postoperative care to patients with surgically amenable disease. To the degree that radiologists and surgeons are not fully practicing their specialties, the quality of medical care suffers because their proficiency declines.

Conversely, physicians who are prepared as internists and who have been thoroughly grounded in general internal medicine may be more capable of providing continuous, comprehensive care to specific categories of patients if they have had subspecialty training (23). As the distribution of the U.S. population continues to shift toward a higher proportion of the elderly, the number of patients whose medical problems derive from degenerative or chronic disease of various organ systems will increase. The medical care problems posed by this aged population will increase the demand for physicians who have both the knowledge and skill to diagnose and manage problems of specific organ systems and who can and will simultaneously provide continuing, comprehensive care. To illustrate, the likelihood is that many diabetic patients will receive better care when their general medical services are provided by physicians who know how to apply the full array of available knowledge and technology to the prevention or treatment of the many complications to which diabetics are susceptible. Consequently, in some instances, internists who have subspecialty training in endocrinology may well be the primary care physicians for diabetics and should undertake the management of their medical services.

However, in undertaking this role, medical subspecialists must provide comprehensive, continuing care and not focus only on the problems related to their areas of subspecialization.

This concept of the generalist also having subspecialist skills poses several questions.

1. Should each generalist (internist, family physician, obstetrician-gynecologist, and pediatrician) also have an area of special interest? Some generalists are attracted to the problems posed by one organ system over another, and a degree of concentration of interest provides intellectual stimulation. Licensure policies permit generalists to employ specialized techniques and do not require that they have more than rudimentary knowledge and skills.

2. If generalists do develop areas of concentration, at what point will the quality of their services suffer because they will be less interested in providing continuing, comprehensive care? Will their skills in providing specialized services be inadequate because of both insufficient preparation and underutilization?

3. How will specialty or subspecialty concentration by generalists affect the utilization of fully prepared specialists and subspecialists? Will the proficiency of fully prepared specialists and subspecialists decline because they are not fully engaged in practicing their specialty or subspecialty?

These questions illustrate the dilemma which medical educators, the practicing profession, and public and private agencies must resolve as they assess (*a*) the need for specialists and subspecialists and (*b*) the relationship among generalists, specialists, and subspecialists. Predictions of future manpower needs must be based upon a realistic appraisal of the anticipated role that each will play in the health care system of the future. The appropriateness of these roles must be judged by assessing the adequacy of medical services being provided. Such assessments should focus on rational geographic and demographic units.

There have been many studies directed at estimating the need for physicians of various types in the United States. Approaches vary. Some have sought consensus among practitioners of a particular specialty regarding the need to increase or decrease their numbers. Other studies have been based upon assessments of the current level of demand for services provided by a specialty. Still others have tried to predict future needs by attempting to estimate the prevalence of diseases and medical problems in the population and relating such estimates to the mix of specialists needed on the basis of the time and effort required to diagnose and treat various conditions.* All of these efforts fail to provide sufficiently reliable or valid data to justify policies that would change rapidly the specialty mix of graduate medical education positions. They also fail to meet the test of local significance. Formulas to predict national needs do not provide for the specific needs of various geographic areas and populations.

> *National specialty societies, third-party payers, academic medical centers, and governmental agencies should collaborate in the development of approaches*

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* The Graduate Medical Education National Advisory Committee (GMENAC), which was first chartered by the Secretary of Health, Education, and Welfare in 1976, issued its report on physician supply and requirements on the same day as the AAMC's Conference on Graduate Medical Education. The GMENAC predictions for requirements were based on the prevalence of disease and assumptions about the number of physicians in the several specialties needed to provide services to patients with various diseases. The inability of GMENAC, or any group, to forecast changes in diagnosis and treatment due to new knowledge and technology, coupled with the numerous assumptions that were made, has evoked significant criticism of the predicted requirements both for the total number of physicians and their distribution by specialty.

to assess the adequacy of medical services. Assessments should be related to the adequacy of medical services in defined, rational geographic areas and the adequacy of medical services to specific populations having common demographic characteristics within such geographic areas.

Modifying Physician Supply

Goal 3 Policies to adjust the availability of opportunities for education and training in the various specialties and subspecialties of medicine should take into account the length of the period required to prepare physicians to be proficient practitioners and the unpredictability of the influence of advances in the biomedical sciences on the characteristics of medical services to be provided the population in the future. Approaches to the modification of the mix and size of graduate medical education programs should be based upon preserving the diverse missions of medical schools and teaching hospitals and assisting them in their efforts to meet their local, regional, and national obligations to prepare qualified physicians to supply the medical services required by the U.S. population.

The graduate education of physicians to be proficient practitioners of their specialties requires three to seven years. This lengthy period imposes a need to make adjustments in educational programs slowly and judiciously. The effects of change on both the quality and quantity of future medical services that will be provided cannot be assessed until the physicians entering the specialties affected by a change are in practice. Predicting the effect of an adjustment in available opportunities for education and training in a specialty is further complicated by three major factors.

1. Advances in the biomedical sciences and their attendant impact on the need for practitioners with new knowledge and skills are occurring at an increasing rate. The need for practitioners of a particular specialty may be either increased or decreased.

2. National, state, and local perceptions and policies regarding the quantity and level of medical services to be made available to various populations fluctuate and are unpredictable.

3. The United States has gone through an unprecedented expansion of the number of its medical schools and the size of their classes. The effect of doubling the number of physicians being prepared for practice cannot yet be estimated.

The long period of preparation and the unknown consequences of these three factors on the requirements for medical services a decade hence argue against a national strategy for modifying the specialty distribution of physicians based principally on controlling access to opportunities for education and training. There is evidence that the recognition and articulation by both the profession and society that trends in specialty distribution need to be altered have already had an effect. During the past decade, the national concern to increase the number of generalist physicians has resulted in a significant expansion in the number of students selecting careers in family practice, internal medicine, obstetrics-gynecology, and pediatrics, while the number selecting careers in other specialties has grown less rapidly. The effect of this trend will not be observable until a substantial number of these generalists establish the location and style of their practices.

Of particular note is a recent study by Schwartz and colleagues in which trends in the distribution of board-certified physicians in eight specialties between 1960 and 1977 were analyzed (24). They found an unanticipated migration of specialists from metropolitan areas into smaller communities. They attributed this to the increased number of physicians and specialists and hypothesized that economic forces were causing specialists to locate in communities previously considered insufficient in size to support their services. In 1977, 75 percent of the towns with populations between 10,000 and 20,000 were served by specialists in family practice or by a combination of specialists in internal medicine, pediatrics, obstetrics-gynecology, and surgery.

> *The consideration of policies to modify the opportunities for education and training in various specialties should be undertaken with full recognition of the imprecision in forecasting the need for specialists and the mounting evidence that medical students do modify their career choices when there is a general agreement that a change in specialty distribution is needed. The precise control of graduate medical education positions through an allotment system can neither be justified nor proved necessary. Such control, which has been proposed at both national and state levels, should be avoided.*

> (Conference discussants expressed strong agreement about the importance of this statement. They were concerned about the potential impact of the report of the Graduate Medical Education National Advisory Committee which predicted a surplus in a number of specialties. The possibility that efforts to effect abrupt reductions in graduate medical education positions by some form of federal or state regulation was raised. There was a consensus that such efforts would be disruptive. Further, in light of already recognized changes in physician distribution, the conferees believed that regulatory control will not be needed.)

The avoidance of an allotment system to control opportunities for specialty education and training does not imply that there should not be concern about approaching an appropriate distribution of graduate medical education positions to be offered in the specialties and subspecialties. However, this concern should be multicentric and lodged with the diverse institutions that provide graduate medical education in the United States. Chapter 2 explains how teaching hospitals and their graduate programs have coalesced into academic medical centers associated with a medical school and points out that the faculty for graduate medical education and undergraduate medical education is essentially the same. Each academic center is now responsible for the education and training of two classes of students as demonstrated in Table 5.2. One is the class admitted to medical school from college, and the other is the class admitted from medical school to the center's graduate programs (9).

The centers have diverse missions, are unevenly distributed across the country, have varying obligations to their states and regions, have complex interinstitutional relationships, and are supported financially from multiple sources. In the past, institutional concerns about class size and educational policy have been limited to the undergraduate phase of medical education for which an accredited medical school is responsible. There is a growing trend for academic centers to believe that their graduate medical education programs should also be of broad institutional concern involving greater responsibility for the mix and size of their graduate programs and their quality. This trend provides a new opportunity to effect change in the number of specialty education opportunities available by building upon the local knowledge and diverse mission of these centers.

In order to develop institutional approaches to modifying the mix and size of their programs, the academic medical centers require assistance in two areas.

1. Academic centers need information about the number, types, and practice locations of those who complete their graduate programs. When fully operational, a tracking system, now in development, will provide data to enable the institutions to examine whether the output from their

TABLE 5.2

Residency Profile of a Medical Center

Group Type	Graduates from School in Hospitals					Total Positions Offered	First-Year Positions Filled by U.S. Graduates in Hospitals Associated with This School			
	Associated with This School	In Same State	In Other States	Federal	Total		From This School	From This State	From Other States	Total
Family practice	5	7	8	0	20	28	5	5	18	28
Internal medicine	7	0	36	2	45	36	7	4	25	36
Pediatrics	1	1	12	0	14	15	1	1	12	14
Obstetrics/gynecology	3	0	3	2	8	9	3	0	6	9
Neurology	0	1	1	0	2	0	0	0	0	0
Psychiatry	5	0	2	0	7	13	5	1	7	13
Surgery	1	1	7	4	13	19	1	1	15	17
Orthopedic surgery	0	1	0	0	1	2	0	1	1	2
Anesthesiology	1	0	0	0	1	6	1	0	4	5
Pathology	1	0	0	0	1	4	1	0	3	4
Radiology	0	4	2	0	6	2	0	0	2	2
Flexible	1	0	3	2	6	8	1	2	5	8
Preventive medicine/public health	1	0	0	0	1	1	1	0	0	1
Total*	26	15	74	10	125	143	26	15	98	139

SOURCE: National Resident Matching Program.

*The percent of total graduates for each respective column is: 20.8, 12.0, 59.2, 8.0, 100, 114.4, 20.8, 12.0, 78.4, 111.2

graduate programs is consonant with their stated mission and their obligations to meet medical service needs.

2. Resources are needed to promote both the expansion and contraction of graduate programs in an academic center. Reducing the number of residents in one program and increasing the number in another is difficult, even when intrainstitutional consensus has been achieved. For the program that is to be reduced, the patient care responsibilities and the educational responsibilities to other services will usually not change. Replacement personnel must be assigned to fill these responsibilities, and the cost of these replacements may increase the cost of the program. For the program that is to be expanded, additional clinical resources and new personnel will have to be developed to maintain the quality of patient care and education. In most cases, the simple transfer of resources from one program to another is not feasible. To illustrate, reducing the number of residents in a surgical program will reduce neither the number of surgical patients for whom the service must assume responsibility nor the number of surgical consultations requested by other services. If the remaining residents attempt to provide the same level of services, their education will be impaired. Full-time surgeons who have completed their training will be needed to replace residents. The cost of the surgical program will be greater. Reducing the number of residents in the surgical program will not produce funds to expand another program.

The provision of resources to promote new program development or the expansion of existing programs is presently provided largely through project grants. The concept of requiring additional resources to compensate for the cost of reducing or eliminating a program has not yet been widely discussed or understood. These issues are developed in greater detail in the chapter on financing graduate medical education.

The evolving system for tracking the career development of medical students and residents should proceed and be expanded or modified in order to provide academic medical centers with ongoing, accurate information about the types and numbers of specialists and subspecialists being educated in their sponsored graduate medical education programs.

Both granting and reimbursement policies should be adapted to promote opportunities for academic centers to adjust the mix and size of their graduate programs in accordance with their missions and obligations while maintaining the quality of both education and patient care.

Providing Subspecialty Education

Goal 4 Physicians seeking certification of special competence in a subspecialty by a primary specialty certifying board should be required to be educated only in programs approved by residency review committees and accredited by the Liaison Committee on Graduate Medical Education.†

(Conference discussants generally viewed the accreditation of subspecialty training programs as highly desirable. Concern was expressed that accreditation of subspecialty training programs might subsequently lead to those subspecialties wanting status as primary boards.)

Specialty board policies require that physicians seeking primary certification in a specialty obtain their education only in programs approved by residency review committees and accredited by the Liaison Committee on Graduate Medical Education. This requirement has generally ensured that graduate programs have sufficient resources and educational commitment to prepare their residents for certification. Third-party payers have restricted their funding to programs that are accredited.

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† The Liaison Committee on Graduate Medical Education was replaced by the Accreditation Council for Graduate Medical Education effective January 1, 1981. See Appendix 1 for additional information.

Subspecialty disciplines have evolved as areas of particular concentration within a primary specialty. Primary boards now award special certificates in 29 subspecialties. The American Board of Internal Medicine, for example, awards a certificate of special competence in 10 subspecialty areas, and the American Board of Pediatrics recognizes six subspecialties. To be recognized as subspecialists by these boards, candidates must be certified by the primary board, have two or more years of education in a subspecialty program associated with a primary program, and pass an examination. Out of 14 subspecialty areas in medicine and pediatrics, only pediatric-cardiology programs have residency review committee accreditation standards and are accredited by the Liaison Committee on Graduate Medical Education.

For several years the pediatrics and internal medicine boards have requested that the Liaison Committee on Graduate Medical Education develop an accreditation process to ensure that their subspecialty graduate programs meet acceptable standards of quality. The Liaison Committee on Graduate Medical Education is now beginning to implement procedures to accommodate these requests. Meanwhile, third-party payers have had no means of evaluating whether these subspecialty programs are of sufficient educational quality to merit the provision of financial support. Medical schools and teaching hospital officials also have had no national measure of the quality of the subspecialty programs in their institutions.

It can be anticipated that more subspecialties in various disciplines will evolve and specialty boards will certify physicians in new areas of special competence. As this occurs, the Liaison Committee on Graduate Medical Education should include these programs in the accreditation process much more rapidly than subspecialty programs have been included in the recent past. Implementation of the recommendations in Chapter 4 will facilitate this.

The Federated Council for Internal Medicine has recommended that the number of positions in subspecialty education and training be modified (25). In 1978 the Association of American Medical Colleges recommended that subspecialty positions in medicine and pediatrics be reduced by one-third. The Task Force on Graduate Medical Education believes that the imposition of a specific national target for subspecialty training opportunities is neither necessary nor desirable. While the standards set for accrediting subspecialty training may restrict the number of sites for graduate training to settings considered of acceptable educational quality, the system of accrediting graduate and fellowship education should not be used to manipulate the number of physicians prepared for the practice of particular specialties and subspecialties. Requiring subspecialty programs to be accredited will ensure that only programs with sufficient resources and acceptable educational quality are available for subspecialty education and training. As accreditation of subspecialty programs becomes available, agencies responsible for their financing should support only accredited programs. Institutions should assess the societal need for subspecialists in a discipline before seeking program accreditation.

The residency review committees and the Liaison Committee on Graduate Medical Education should improve and expand their accreditation procedures and include graduate programs for all *subspecialties for which a certificate of special competence is awarded by a specialty board.*

When accreditation of subspecialty programs by the Liaison Committee on Graduate Medical Education is available, agencies responsible for the support of graduate medical education should restrict their funding to accredited programs.

When accreditation of subspecialty programs is made possible by the Liaison Committee on Graduate Medical Education, academic medical centers should assess whether or not the need for subspecialty services justifies their development of accredited programs.

Broad Education of Medical Students

Goal 5 The undergraduate medical education of students should ensure (*a*) that they are thoroughly prepared to enter the graduate phase of medical education and (*b*) that they have attained broad fundamental knowledge and basic clinical skills. Concentration in a specialty track that precludes a broad curriculum during the undergraduate period should be discouraged.

Most students, when selected for admission to medical school, have insufficient knowledge upon which to base an informed decision about what their ultimate specialty career will be. At present, assessment instruments are not available that reliably will permit the selection of students on the basis of their likelihood of pursuing one specialty over another. Medical schools should continue to select students who are both intellectually capable and who have the personal qualities needed to fulfill the broad responsibilities expected of all physicians. During their undergraduate education, the faculties should ensure that students attain fundamental knowledge in both basic and clinical sciences and should particularly focus on their development of basic clinical skills.

Academic medical centers have become increasingly complex organizations that carry out a variety of educational, research, and patient care missions. In most cases, the faculties are expected to provide sophisticated specialty services and to engage in both basic and clinical research. These missions result in a pattern of organization of teaching hospitals and clinics that, while being excellent settings for the education of advanced specialists, may not be appropriate for teaching basic clinical skills to undergraduates. A faculty composed principally of specialists and subspecialists whose major role is to apply advanced knowledge and technology to clinical problems in narrow domains of interest may neglect to demonstrate to students that most medical problems are amenable to simple methods and may fail to ensure that students acquire basic knowledge and skills. This dichotomy must be recognized, and medical school faculties should analyze whether or not their research and advanced educational responsibilities interfere with the sound preparation of medical students for graduate medical education. Alternative clinical educational settings and faculty members who are recognized and rewarded for their ability to concentrate on teaching basic clinical skills may need to be developed. Techniques to evaluate whether or not students have attained basic clinical skills before graduation should be developed and implemented by every faculty.

Medical school faculties should examine their curricula and the goals and objectives of their instructional programs for undergraduate students and ensure that all students have broad, fundamental knowledge and basic clinical skills.

Flexible institutional support should be provided to assist in such curricular reorientation.

Modifying Reimbursement Policies

Goal 6. Changes in the mix and type of specialists being prepared through graduate medical education should be paralleled by complementary changes in reimbursement policies for medical services so that the economic incentives shaping medical practice are consistent with the desired changes in specialty distribution.

(In the conference discussion groups, Goal 6 was highly controversial. Some discussants opposed Goal 6 in its entirety, or found the goal desirable but difficult to implement, or criticized the task force for an unwarranted attack on physicians who practice in procedure-intensive specialties who apply the procedures judiciously.

(Some thought that choosing a specialty is a "multifactorial" decision and that economic grounds alone are not a major influence. Some expressed the view that economic factors play a greater role in decisions about practice patterns within a specialty than in career choices among specialties by students and argued that potential income is not a factor in specialty selection at the undergraduate medical level.)

Efforts to change the specialty distribution of physicians have in the past been directed almost solely toward changing the mix and types of opportunities available for graduate medical education. Little attention has been paid to whether the influences beyond graduate medical education which shape medical practice are consistent with the pattern of specialty distribution that is desired.

The concept of having a plurality of physicians who will develop personally satisfying careers as generalists to provide continuing, comprehensive care and act as patient advocates when specialized services are required is antithetical to present policies that pay a premium for diagnostic and therapeutic procedures and undervalue basic clinical knowledge and skills. Payment for the professional time invested in listening to, examining, and counseling patients is so inadequate that generalists must keep their interval of time with each patient to a minimum and utilize it to order or perform procedures. Even when generalists do not directly perform a procedure, they refer patients to specialists for a procedure in order to reduce the time that otherwise they would need to spend with patients.

Physicians prepared to be generalists often become frustrated by their inability to provide the quality of services they desire because they must both see a great number of patients and order or perform procedures for which they are not well prepared. No matter how motivated they are to be generalists, many eventually will either limit their practices to a specialized area and seek to improve their skills in that area through short, continuing medical education courses, or they will return to graduate medical education for extensive training in a specialty or subspecialty.

(Some conferees objected to this statement on the grounds that it cast doubt on whether physicians prepared as generalists could or would maintain long-term careers as providers of continuing, comprehensive care.)

Restructuring payment policies for medical and hospital services to decrease the premium paid for procedures will be resisted. Developing equitable payment policies which will encourage only the selective use of technical procedures and reward sound clinical judgment will be difficult; but unless the economic incentives are changed, efforts to modify the distribution of specialists will have little effect on improving the quality of medical care.

Academic organizations, national specialty societies, hospital associations, and third-party payers should work to-

gether to develop payment policies that will reduce the economic incentives to overutilize procedures.

Effecting Desirable Change

Goal 7. Academic medical centers, specialty boards, professional societies, and federal and state governments should work together to improve the distribution of physicians and the adequacy of medical services. The inability to effect a detectable change in a short time should be recognized, and program modifications should be based upon a realistic schedule that takes into account the three- to seven-year period of graduate education needed to prepare a physician.

(Conference discussants noted that Goal 7 implies an ongoing data collection system without specifically stating whose responsibility this would be, what should be collected, and how this can be accomplished. Data that should be obtained include defining what services physicians actually provide [which may be different from what they are educated to provide] and what their migratory patterns are. The best data possible should be obtained but with the full realization that they are not always reliable, that some specialties will always have trouble recruiting, and that needs cannot be projected 15 years off. Current trends should be examined rather than attempting long-range predictions. If data were developed and provided to medical students, residents, program directors, and others, people could make enlightened choices that would deal with these issues.

(Some said that the specialty distribution system should be controlled at the level of entering medical students rather than at the residency level. Several discussants asked whether anything should be done to alter the choices of undergraduates for specialty training in view of emerging market forces. Medical students are now investigating whether specialties are in long or in short supply in areas in which they would like to locate. The argument was made that this would ultimately promote proper specialty choices. Optimism was expressed that the marketplace will work without regulation.)

Historically, the partnership between the medical schools and government has been most productive when there was agreement on the goals and the resources as well as the time needed in which to achieve them. After World War II, expansion of the nation's biomedical research effort was made possible by the collaborative efforts of the medical schools and the National Institutes of Health to increase the number of biomedical scientists and to support their research programs. The government did not demand immediate results, and over a period of two decades spectacular gains were made in basic knowledge and in the ability of physicians to intervene effectively in the prevention and treatment of disease.

When accord was reached to increase the number of physicians being educated, federal and state governments supported the academic institutions in the expansion of classes and in the founding of new schools. Within a decade, the number of students entering U.S. medical schools doubled.

However, in the debates over how many specialists and what kind should be prepared, it has been difficult to clarify the limited role of the academic medical centers and to gain sufficient time for program development or modification. As a result, the relationship between the government and the academic medical centers has moved from one of harmony with mutual understanding and support to one of coercion. Laws, regulations, and agency policies have been based on the thesis that the academic medical centers are unwilling to become involved in modifying the distribution of specialists. Rather than providing incentives to change and then allowing the centers to initiate programs best suited to their missions and resources over a reasonable time period, the government has attempted to coerce all institutions by threatening to withhold support and has expected responses to occur in an unrealistically short time. Even when positive incentives have been provided through special project grants, the terms and conditions imposed for support and the period of support have been unrealistic and have failed to capitalize on the diversity of the institutions and their creative ability to innovate if given adequate resources and time.

Governmental impatience and the growing tendency to be coercive have made adversaries of government and academic medicine. Both sides must recognize that neither can change specialty distribution or improve the quality of medical services provided in the United States unless both agree regarding what needs to be accomplished, what can be accomplished, and what resources are needed to achieve the goals. The influence of factors beyond the control of academic medical centers that will perpetuate the maldistribution of specialists must be taken into account if accord is to be reached establishing a mutually productive partnership to solve this complex problem.

Conference Discussion

Dr. Spencer Foreman reported for the six conference workshops of 108 individuals who discussed specialty distribution and graduate medical education. Observations from these groups are presented throughout this chapter.

Goal 6, related to reimbursement policies and specialty distribution, was defended by one spokesman who has experienced difficulty in recruiting faculty from high-income specialties such as gastroenterology, cardiology, and nephrology. He suggested that the statement was not strong enough and pointed out that specialty choice is not made at the medical student level but at the residency, fellowship, and faculty level.

It was suggested that the report might include a recommendation that each educational institution be responsible to provide an equitable number of residency positions relative to the number of graduates it is producing. The chairman described ongoing efforts by responsible organizations in the field of internal medicine to get the number of residency positions in the first three years of internal medicine to meet the need more appropriately.

Working Group on Specialty Distribution and Graduate Medical Education

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Observer/Participants

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Chapter 6

The Financing of Graduate Medical Education

Medical education, both in the undergraduate and graduate phases, is based upon the direct involvement of students in the diagnosis and treatment of patients. The case method is the foundation of clinical education and training. This requires that the education of future physicians be conducted in those settings in which medical services are currently being provided to sick patients. Medical and surgical services can be provided in the absence of education and training of medical students and residents, but education and training cannot be accomplished in the absence of patient care services. This dependence of medical education upon direct, active, and intimate involvement in patient care creates complicated financial policy problems that must be recognized and resolved.

Currently, over 60,000 graduate physicians are enrolled as residents in graduate medical education programs in the United States. In previous generations, medical school graduates generally entered practice after a single internship year. In 1979, 93.2 percent of the U.S. graduating class responding to a survey by the Association of American Medical Colleges expressed the intent to complete the educational requirements for specialty certification (8). These requirements will range from three to seven years.

Prior to the 1960s, residents in most programs did not receive significant stipends. Their clinical experience was gained primarily in public hospitals and the charity wards of nonprofit, voluntary hospitals. Supervised by their mentors, residents participated in the care of patients to whom medical services were provided through state and local tax funds or philanthropy. Program faculties consisted of combinations of salaried physicians, whose incomes were derived from medical schools or teaching hospitals, and volunteer physicians who participated in the education and training of residents without remuneration. Although there were costs in the provision of services to the medically indigent in that era, the minimal stipends for residents and the voluntary efforts of teaching physicians kept hospital expenditures for graduate medical education low, and the source of financing was not an issue. In contrast, 20 years later the cost of graduate medical education and how it should be financed are major issues. The origin of these issues must be explored, and the rationale of current financing mechanisms must be evaluated if future policies for stable financing are to be formulated and implemented.

The Evolution of Financing

Beginning in the 1950s and culminating in the early 1960s, philosophy and policies changed regarding the financial support of residents during their graduate medical education. Change occurred for several reasons. Medical educators and the profession-at-large recognized that a single internship year was no longer sufficient to prepare graduates to be proficient practitioners. Increasing the length of graduate education and making it available to all graduates regardless of their economic status also made it necessary to provide stipends sufficient to permit residents to pursue graduate medical education rather than to enter practice before they were prepared. This change from the old philosophy that interns and residents should be provided only personal subsistence and a minimal, if any, cash allowance added substantially to the cost of graduate medical education. Direct costs for stipends and fringe benefits for fiscal year 1979–80 have been estimated to be $14,800 per year per first-year resident (26). Based on Council of Teaching Hospitals' survey data for 1979, it was estimated that approximately $1.2 billion was spent on resident stipends and benefits for fiscal year 1979–80. The national expenditures for health care services for 1979 were projected by the Secretary of Health, Education, and Welfare to be $206 billion. Stipends represent one-half of one percent of these expenditures.

Since World War II, expenditures for medical care, rather than being borne directly, have increasingly been reimbursed through medical insurance programs. In fiscal year 1977, 94 percent of all hospital revenues were derived from insurance programs (27). Medical insurance is now an assumed fringe benefit that employees receive. Those beyond their working years are covered by Medicare, and Medicaid offers some financial support to provide for the needs of the poor and near-poor.

The evolution of medical insurance in the United States paralleled the change in philosophy regarding the quality and amenities of medical services that should be provided to the entire population. This is usually expressed as moving away from a two-class system—with the indigent receiving medical care in crowded outpatient departments and charity wards and the affluent receiving care in separate and more comfortable facilities—to a one-class system with the fiscal barriers to medical services at the same level for all removed. This change in philosophy is generally accepted, but its realization is not yet complete.

Guided by the one-class philosophy and faced with the necessity of increasing the number of positions in existing programs and creating positions in new and developing programs, medical educators extended their programs to include clinical care settings that previously had not been significantly involved in graduate medical education. These were private pavilions and clinics where the attending physicians charged for their services and expected payment from their patients and/or reimbursement from third-party insurers. These developments began to inject financing issues into graduate medical education.

In the 1970s two more factors complicated the financing issue. The rapid escalation of medical care costs, particularly total hospital care expenditures, which averaged 13.9 percent per year from 1965 to 1976, has caused third-party payers—the industries that pay medical insurance premiums and the federal and state programs that insure the unemployed—to attempt to control costs. For a variety of reasons, teaching hospitals have been prime targets for cost control. The second factor is the growing dependence of medical schools and their faculties on professional fee income, both to support educational programs and to maintain reasonable parity in income for the faculty.

The issues generated by changes in where graduate medical education is provided, by changes in philosophy and policies about resident stipends, by the movement toward a one-class versus two-class system, and by the change to predominant payment for medical services by third-party payers are complex. Their resolution must involve negotiation and understanding among medical educators, hospital administrators, private insurers, industrial purchasers, and state and federal insurance programs. It is particularly important that long-term policies for the stable financing of graduate medical education be developed and implemented.

Reasons for Financing

If acceptable policies are to be developed and implemented to finance graduate medical education, there must be concurrence with its goals. In the chapter on The Quality of Graduate Medical Education it is stated that the principal goal is to prepare proficient practitioners and equip them for continued professional development. The secondary goal is, in the aggregate, to prepare a spectrum of physician specialists consistent with the medical services that are to be made available to our citizens. If these goals are accepted, then financing policies should facilitate their accomplishment.

To accomplish the principal goal, adequate financial resources are needed to provide graduate medical education of three or more years' duration for every graduate from an accredited U.S. medical school in an accredited graduate medical education program. To accomplish the secondary goal, these resources should be derived from sources that are sufficiently flexible to allow change in the size and scope of programs in the several specialties of medicine and to permit the development of new programs and the reduction of old ones as medicine advances and as public expectations change.

Graduate medical education should not be financed for the sole purpose of providing direct medical services to patients for whom physician services are not available. The need to finance residency programs without regard to their merits in order to provide patient care to an underserved population has often been expressed. The provision of services to these populations should be accomplished by alternate means if the educational programs are not of sufficient quality to achieve the primary goal of graduate medical education.

Education Versus Service

A controversy surrounds the status of residents. Are they graduate students pursuing education for the purpose of qualifying as independent practitioners, or are they qualified physicians serving as employees of hospitals in an on-the-job training program? Is financial support provided to them in order that they may complete the graduate phase of their education, or are they paid for the professional services they provide in the course of their activities as resident physicians responsible for the care of patients in a hospital or clinic?

These issues are complex. Some residents are concerned that if they are given the status of graduate students, they will be deprived of opportunities to organize and bargain collectively for the terms and conditions of their employment. Some teaching hospital and academic administrators are concerned that if residents are given the status of graduate students, institutions will not be reimbursed for the professional services residents provide during their education and training.

Historically, those physicians who chose to pursue graduate medical education beyond the internship year made a personal decision to forego the potential earnings available to them if they entered practice. In order to gain greater knowledge and skill, they sought a relationship with mentors who, in the context of their medical practice, could teach them. They assumed some of the responsibilities for the care of their mentors' patients, which was necessary to achieve their educational goals. This assistance was of benefit both to their mentors and to their mentors' patients. The difference between resident physicians having this relationship to a staff of teaching physicians and physicians hired by hospitals to care for patients without a commitment to their education was distinguished in the report (7) of the Advisory Board for Medical Specialties' Commission on Graduate Medical Education in 1940:

> The appointment of a young physician primarily to aid the medical staff in the care of patients should be clearly distinguished from appointment of a resident who is to be given educational opportunities. The former can be described best as a "salaried house officer."

The commission was clearly concerned that hospitals or services employing contract physicians not be considered to be preparing physicians for recognition as specialists.

Subsequent to World War II, the growing demand for graduate medical education caused a rapid increase in the number of hospitals offering graduate medical education and the number of positions available. During the late 1940s and 1950s, disparities were seen in the stipends teaching hospitals offered. Those hospitals with reputations for high quality graduate medical education offered little more than subsistence and a small allowance, while those of lesser reputation provided significant stipends to attract residents. These stipends presumably offset the lesser educational opportunities offered to residents in these hospitals.

In the 1960s, when the growing need for essentially all medical school graduates to have extensive graduate medical education was apparent and all teaching hospitals began to provide significant stipends, the financial burden of this support was assumed by public and private agencies responsible for the payment of hospital expenses on the basis of the professional services provided to patients by residents in the course of their education and training. Contractual agreements between residents and hospitals specifying the terms of their remuneration became common.

Some have compared this status with that of individuals entering other professions. They cite, for example, the field of law. Law firms may hire recent graduates and assign them roles in which they provide service to the firm's clients while they are learning from the firm's senior partners. The law firm, in turn, bills its clients for services that include those of the new graduates. The same applies to industrial firms where recently graduated engineers and administrators are provided on-the-job training, the costs of which are ultimately recovered in the pricing of their products. However, firms that provide education to their junior professionals are generally motivated by their desire to recruit and keep them as long-term employees. They provide educational opportunities, mainly consistent with the firms' needs, to employees who are expected to stay with the firm. They are not subjected to any external scrutiny of the content or quality of their educational offerings. Their motivation and the control of the scope of their educational programs are, thus, quite different from those of teaching hospitals.

First, teaching hospitals do not expect residents who complete their graduate programs to join their staffs or even remain within their communities.

Second, unlike any other profession, there is a consensus among medical educators, practicing professionals, hospitals, public and private agencies, and residents themselves that graduation from medical school is not a sufficient credential for the independent practice of medicine.

Third, medicine has developed a highly structured system through specialty board certification to provide credentials recognized as sufficient for the independent practice of medicine.

Fourth, there is a national system to set educational standards and to accredit programs in graduate medical education that are acceptable to specialty boards for the education and training necessary to be considered for certification by the boards.

Thus, graduate medical education has evolved into a formal phase in the preparation of physicians that is more like university-based graduate education in other professions and disciplines than on-the-job training. However, it is predominantly conducted in the workplace of medicine, rather than in university classrooms and laboratories; thus, the controversy about resident status remains unresolved.

The foregoing arguments demonstrate the unique status of residents. They are completing the final phase of their education and training as physicians in a formal and structured system which exists in the workplace of medicine. They are not quite like graduate students, and they are not quite like employees receiving on-the-job training. They are residents. They require financial support because most could not finish their preparation to be proficient practitioners of medicine without support, and they deserve financial support because their participation in the care of patients in the course of their education contributes to the quality of care in teaching hospitals.

Effective graduate medical education requires that residents assume graded responsibility for interviewing and examining patients, selecting diagnostic tests and procedures, and integrating all available information to formulate diagnoses and develop therapeutic plans. Depending upon the specialty, residents also must learn to perform various technical procedures. In well organized and supervised programs, junior residents have the initial contacts with patients and, after making their observations and reaching preliminary conclusions, they consult with more experienced senior residents and with the responsible supervisory faculty. The timing and frequency of such supervisory consultations vary with the urgency of the case and the type of specialty. In surgical programs, where the need for operative intervention is an important decision, residents' therapeutic recommendations and plans are closely supervised and there are frequent contacts between residents and faculty. In medical programs, the timing of the review of cases by faculty with residents may be quite different, with scheduled reports and rounds being the predominant mode. For both surgical and medical specialties, the degree of immediate supervision of residents while performing diagnostic or therapeutic procedures is determined by residents' prior experience, their demonstrated acquisition of skills and the complexity and urgency of the procedure.

In well organized and supervised programs, residents are permitted to assume responsibility for patients' care commensurate with their ability and experience. Each patient is unique. Regardless of the complaint, diagnosis, or required treatment, residents can usually increase their knowledge and skills from each patient contact. Programs that do not provide an organization and supervisory system to maximize the opportunity for residents to learn from each patient they care for should be subjected to vigorous scrutiny by the responsible residency review committees and the Liaison Committee on Graduate Medical Education.* If their resources or their educational commitment are insufficient, these programs should not be accredited.

Laxity in accreditation has permitted some hospitals to exploit residents. Excessive service requirements and poor supervision by medical staffs with an inadequate commitment to education have caused justifiable complaints by residents who entered programs in these hospitals expecting that their accredited status provided assurance of their educational quality. The Liaison Committee on Graduate Medical Education has made significant progress in improving the accreditation system. Implementation of the recommendations in the chapter on National Standards Formulation and Accreditation will further strengthen accreditation as a means to prevent exploitation and abuse and ensure educational quality. In the future, institutions and programs must not be permitted to exploit young physicians under the guise of providing graduate medical education.

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* By ratification of its bylaws by all five parent organizations, the Accreditation Council for Graduate Medical Education officially replaced the Liaison Committee on Graduate Medical Education on January 1, 1981. (See Appendix 1.)

Costs of GME

Numerous studies have been done on the costs and financing of graduate medical education (28–37). The most extensive is the study by the Institute of Medicine on Medicare-Medicaid reimbursement policies, which was commissioned by the Congress in 1973 (37). Studies of cost are inevitably confounded by the joint product dilemma; that is, medical care services to patients and the education of residents are inextricably intertwined. Analyses are frequently confused by efforts to judge whether or not graduate medical education produces an add-on cost or a financial gain for teaching hospitals. Examples of costs engendered by graduate programs include resident stipends and fringe benefits; compensation for faculty; special educational opportunities, such as visiting professors and travel by residents to meetings; charges for accreditation reviews; educational resources such as libraries, conference rooms, and audiovisual support; and provision of the support services necessary to accomplish educational goals.

When the costs of medical and surgical services in teaching and nonteaching hospitals are compared, the question often arises whether or not graduate medical education interferes with productivity, which is usually measured in length of hospital stay or number of patients seen per unit of time in clinics. Such simple comparisons—which generally impute an additional cost to graduate medical education—do not usually take into account the severity of illness, the case mix, and the complex, specialized services that are more likely to be provided by teaching hospitals. In defending against criticisms of higher costs and impaired productivity, medical educators and teaching hospital administrators advance arguments about the patient services provided by residents and the better quality of care provided by graduate faculties and residents. These criticisms and arguments and the studies to support one view or another confound the central point. Graduate medical education must be provided. Institutions that have both an educational mission and a patient care mission have and should have different characteristics from institutions with only a patient care mission. Financing strategies should support graduate medical education of high quality and its essential institutions and should provide opportunities for adjustment and innovation. It is accepted that those who pay the costs of graduate medical education should expect those responsible for graduate medical education to be prudent in the management of funds and scrupulous in their judgments about sources of revenue and the allocation of expenditures.

Sources of Financing

Graduate medical education originated as a hospital-based apprenticeship, and its costs have traditionally been accepted as a hospital cost. Public, Veterans Administration, and military hospitals all budget for the costs of graduate medical education in their appropriations requests. Third-party insurers allow payment for the costs of accredited medical education in teaching hospitals. In 1965 this policy was endorsed by statute in the enactment of Medicare and Medicaid. These federal programs allow reimbursement for the reasonable costs of graduate medical education.

In fiscal year 1978–79, the Council of Teaching Hospitals' survey of member hospitals identified sources of revenue for resident and clinical fellow education and training. About 75 percent of the cost of residency programs and slightly over 50 percent of the cost of clinical fellowships in nonfederal hospitals were financed from hospitals' general operating revenues—in other words, undifferentiated payments to these hospitals to reimburse both their patient care and educational costs. Special funds appropriated by states and municipalities accounted for an additional 11 percent of residency funding but only 3.3 percent of fellowship funding. Medical school support was only 2.7 percent for residents and 4.6 percent for fellows. The National Institutes of Health and other federal agencies, exclusive of the Veterans Administration, picked up almost 16 percent of the fellowship stipends but only 1.5 percent of residency costs. Endowments, foundations, and voluntary agencies were significant factors (7.1 percent) in financing fellowships but negligible factors in residency support (26). It is a reasonable presumption that the majority of teaching hospitals not members of the Council of Teaching Hospitals had somewhat less access to governmental and medical school dollars for financing residency programs. On a national basis, therefore, hospital revenues may account for over 75 percent of all graduate medical education financing, exclusive of the Veterans Administration hospitals.

The Veterans Administration is a major participant in graduate medical education. With 134 hospitals and 38 clinics affiliated with 103 medical schools, the Veterans Administration supports over 7,000 full-time equivalent resident training positions of the nearly 70,000 available. Its direct stipend and fringe benefit outlays are more than $135 million annually. Yearly, 25 percent of all residents spend some time in Veterans Administration programs and are supported from Veterans Administration funds.

Although graduate medical education is financed through multiple sources, the major source of revenue to pay for its costs comes from third-party insurer reimbursements to teaching hospitals. Should future financing policies be built upon continuing this practice or should an alternative approach be sought? Considering the essential relationship between graduate medical education and the provision of medical services, it is difficult to conceptualize a financing system for graduate medical education that would be separate and distinct from financing medical services in these institutions.

It is argued that patients should not pay educational costs. This view neglects two facts: patients benefit from the services they receive when residents participate in their care in teaching hospitals, and 94 percent of all hospital revenues are now derived from third-party insurers (37). These insurers—whether voluntary, nonprofit agencies (such as Blue Cross and Blue Shield) or commercial underwriters or federal programs (such as Medicare and Medicaid)—diffuse the educational costs throughout the population through their premium charges or taxation. These insurers have a social obligation to support graduate medical education, for the education and training of future practitioners is an essential investment by the public provided through private health insurance and government programs. This investment ensures that the medical care needs of future generations will be met.

This argument for the continuation of the practice of paying the cost of graduate medical education as a part of patient care costs should be considered in light of a discussion of potential alternatives. One alternative is to pay for graduate medical education from a separate fund. Such a fund could be generated by governmental appropriation of tax dollars. The magnitude of such a fund and the complexities of the management of its disbursements make this alternative an unrealistic option for long-term financing. Some support is currently provided by federal and state governments for residency and fellowship programs in which the public has a special interest. This support is currently focused principally on the development and maintenance of residency programs in the primary care specialties. This supplementary support of graduate medical education for special purposes by earmarked government funds is appropriate and should continue, but a single fund for graduate medical education from government appropriations is not a practical national alternative.

Another possibility is to transfer the obligation for financing graduate medical education to medical schools. To a large extent, the schools and their faculties now pay part of the costs of graduate medical education. Many program directors and graduate faculty members are salaried from medical school budgets. Faculty practice plans for the disposition of professional fee income generally provide support for graduate medical education in two ways: they augment faculty salaries in order to maintain reasonable parity of income with physicians who only practice medicine, and they provide special funds for educational enrichment. If medical schools were required to assume the total financial burden of graduate medical education, their only sources of revenue would be appropriated tax dollars or philanthropy. The former, as discussed earlier, is an impractical source, and the latter would be insufficient.

A third approach for financing graduate medical education is from revenue generated by physicians. A few large group practice clinics in the United States have traditionally paid residents' stipends from clinic income. For these groups, this arrangement has been satisfactory. Physicians who have voluntarily joined the groups have accepted their educational missions and the fiscal policies to support them. However, in the main, teaching hospital staffs consist of a mix of private practicing physicians who manage their own professional fee income and are not remunerated for their faculty services, private practicing physicians whose income is derived principally from professional fees but who receive part-time payment (either cash or on-site office facilities) for their faculty services, and full-time salaried physicians whose incomes may or may not be augmented by revenues generated by professional fees through a faculty practice plan. This complex mix of income sources for most teaching hospital staffs makes impossible the implementation of a simple policy that graduate medical education should be totally paid for by teaching physicians. The contributions made by volunteer faculty and by faculty who share their incomes with the institutions through practice plans should be recognized, and their contributions should be encouraged; but as a sole or major source of revenue for the support of graduate medical education, financing by teaching physicians is not practical. Taxing physicians for residency training might have the effect of driving away many physicians who admit their patients to teaching hospitals, or they might attempt to recover the costs of supporting graduate medical education by increasing their fees. This would simply shift the responsibility of payment from hospital reimbursement sources to professional service reimbursement sources.

A final consideration is that residents pay for their own graduate medical education. There is a growing public belief that because physicians as a group have a very high income-earning potential, their education should not be subsidized. An increasingly popular view is that undergraduate medical students should pay for education through tuition. Scholarship support is becoming more and more difficult to obtain, and medical student loan programs, although available, rather than subsidizing students, place a heavy and progressively increasing repayment burden upon them. Why should residents not continue to pay for their medical education through increasing their indebtedness and foregoing income until they have completed their education and training requirements for specialty certification? This question raises many significant educational and public policy issues.

The Liaison Committee on Medical Education, which accredits medical schools, has officially stated that graduating students are not prepared to practice independently without supplementing their education by a period of graduate training, the length of which will depend upon the type of practice students select (6). The specialty boards, which set the standards for education and training in the medical and surgical specialties, have established minimum periods of training, the shortest of which is three years. State licensing laws and regulations permit graduates of accredited schools to be licensed either upon graduation or upon completion of one year of graduate training. In effect, the educational policy holds that medical students are not prepared to practice until they have completed specialty certification requirements while the licensing policy holds that they are prepared to practice after no or, at most, one year of graduate training. Were residents charged tuition and provided no subsistence, their opportunities to pursue graduate medical education would vary depending upon their financial resources and their ability or willingness to assume growing burdens of debt. Most would probably have no choice except to enter practice before completing the graduate medical education deemed optimal by medical educators and specialty boards.

The continuing argument over whether residents are students or employees and whether their compensation is payment for their services or a stipend in support of their education becomes inconsequential when examined from the standpoint of public expectations and medical education policy. The public expects medical educators to prepare proficient practitioners who are capable of continued professional development. Medical educators and specialty boards have determined that three or more years of graduate training are needed to accomplish this. Licensing policies permit practice before attainment of the expected educational level. Placing the burden of financing their education on residents would force them into practice before they are prepared. It is apparent that the policy of providing an adequate stipend to residents should be continued unless there is a change in public expectations and educational policy that eliminates or significantly shortens graduate medical education or unless there is a change toward licensing for independent practice only upon completion of the graduate medical education requirements established by medical educators and specialty boards.

The foregoing discussions of the reasons for financing graduate medical education and the potential sources for its financing lead to the following recommendations.

The Association of American Medical Colleges, its constituent institutions and societies, and the specialty boards, the Liaison Committee on Medical Education, the Liaison Committee on Graduate Medical Education, and their sponsoring professional organizations should reaffirm that the graduate phase *of medical education is essential for the preparation of proficient practitioners capable of continued professional development.*

This reaffirmation should be examined closely by both private and public third-party payers, and conceptual confusions or disagreements should be resolved through discussion with medical educators, their national organizations, and their institutions.

Graduate medical education should continue to be financed from multiple sources, with the principal source being the general operating revenues of teaching hospitals.

The financing of special educational initiatives in graduate medical education from a variety of sources should be encouraged. These initiatives include programs in new and developing specialties, programs to achieve local or regional objectives, and programs to prepare clinical investigators and medical educators. Special initiatives should be supported through grants from private, voluntary agencies and from federal and state governments.

The special financial needs of teaching hospitals should be clearly delineated and recognized. These include the costs of resident stipends and faculty compensation and the costs of providing educational resources and support services.

Special Issues

If medical educators, their institutions, and those who assume responsibility for financing graduate medical education agree that stable funding policies for graduate medical education should be intertwined with payment policies for medical and hospital services, several special problems must be solved. These are: (*a*) compensating teaching physicians; (*b*) adjusting the mix and size of specialty programs through financing policy; (*c*) financing ambulatory care educational settings; (*d*) financing graduate education in preventive medicine; and (*e*) containing the cost of graduate medical education.

COMPENSATING TEACHING PHYSICIANS

The movement toward the philosophy that there should be a one-class medical service system in the United States and the involvement of private and government third-party payers in the reimbursement for medical services and education have created enormously complex and still unresolved problems regarding the compensation of graduate medical faculties, the provision of stipends to residents, and their joint patient care and educational responsibilities.

The Medicare program finances the reasonable costs of graduate medical education by providing resident stipends and payment for supervision of residents by medical faculty under Part A and pays, under specified conditions, for professional medical services by teaching physicians to Medicare beneficiaries through Part B. The complexity of the payment program and uncertainties in administrative policy in the early years of the program led to an investigation by the General Accounting Office of the cost accounting and billing practices of teaching physicians and teaching hospitals in 1969. Teaching hospitals and faculties were charged with two principal abuses: billing professional fees for services not personally performed by the faculty and billing professional fees for patient services provided by faculty members who were already compensated through payments to hospitals under Part A. Since the airing of these charges, teaching hospitals and their staffs have largely eliminated such abuses, but efforts to impose special restrictions on the reimbursement of faculty and teaching hospitals continue.

Another problem has been the level of the fee that should be paid for physicians' services in teaching hospitals. Resolution of these issues is urgently needed. The following principles should be the basis for policies involved with the compensation of teaching physicians.

1. In a teaching hospital, if the level of professional medical services provided a patient by the physician and documented in the hospital record is equivalent to the level of service furnished a private patient in a nonteaching hospital, then the physician in the teaching hospital should be eligible for fee-for-service payment on a reasonable charge basis.

2. Hospital administrators and medical faculties have the responsibility to ensure that care is of high quality and that physicians who submit bills for professional services have personally directed the care of the patient. Their ethical standards in adhering to this principle must be impeccable.

3. Third-party payers should not pay twice for a single service. Refuting the contention that physician teachers who are paid through hospital reimbursement for their educational and supervisory services are double billing if they seek payment for their personal contributions to the professional care of patients will depend on more precise descriptions of the educational and supervisory activities that are paid for through hospital reimbursement. These descriptions should be developed by local administrators and faculty and reviewed and approved by third-party payers. There is a significant institutional responsibility to be sure that fees for professional services are not billed for time and effort that are simultaneously financed by a hospital salary for education or supervision.

4. The determination of the amount of payment for professional services provided to a beneficiary should not depend upon whether other patients who are not beneficiaries, and who do not have the same resources for the payment of professional fees, are cared for at a lesser or no charge. The contention that the teaching staffs in institutions that historically have provided medical care to indigent patients should not be permitted to collect in full for professional services to Medicare beneficiaries denies that one-class medical care is a societal goal. If physicians who provide professional medical services in teaching hospitals at a private standard of care are required to accept fee levels that are substantially below local prevailing rates, these physicians will have an incentive to discontinue admitting paying patients to these hospitals. This pattern of admission practices will result in all paying patients being admitted to one hospital while nonpaying patients are admitted to another—most likely an urban teaching hospital (most likely, but not always, publicly owned). This result would be a step backward in the effort to achieve a single class of care—a goal toward which significant progress has been made since the Medicare and Medicaid programs were enacted in 1965.

Third-party payers concerned with reimbursement policies related to the compensation of physicians in the teaching setting should adopt the foregoing principles.

Teaching hospitals and medical school administrators and their faculties should adopt these principles and assess whether or not their policies and practices are commensurate with prudent management and acceptable ethical standards. Where deviations are found, policies should be changed and the fac-

ulty should be informed of discrepancies.

MIX AND SIZE OF SPECIALTY PROGRAMS

The type and number of specialists prepared for practice through graduate medical education are issues. The availability of opportunities for education and training in one specialty or another can limit the options of medical school graduates by increasing the competition for positions in specialties with fewer positions and opening opportunities for obtaining training positions in specialties with expanded programs.

The issues related to the role of graduate medical education in modifying specialty distribution and the practice of specialty medicine are detailed in the chapter on specialty distribution. This discussion is limited to how financing could influence the availability of positions in the various specialties and modify the mix and size of graduate medical education programs.

Since World War II, the total number of graduate medical education positions offered has been in excess of the number of graduating U.S. medical students. Thus, career choice, for the most part, has not been limited by the availability of training positions in a specialty. With the number of medical school graduates increasing each year, and now approaching 16,000, the ratio between the number of U.S. graduates and the number of available positions has sharply decreased. According to the National Resident Matching Program, in 1970 the ratio was 1:1.8; in 1979 the ratio was 1:1.3. Increasing competition for graduate medical education positions has resulted. Students no longer are able to count on obtaining a position in a program of the specialty of their choice. This situation lends itself to changing the output of physician specialists by manipulating the mix of available training positions in the various specialties.

There are two possible approaches to using financing to change the mix and size of specialty programs in graduate medical education. These are to provide earmarked special funds for programs that are to be expanded and to restrict funding for programs in specialties that are to be reduced.

The practice of encouraging the initiation or expansion of programs through providing special funds for them is longstanding. Institutions are generally afforded the option of whether they will or will not respond to the special program initiatives, and there is little dispute over whether such financial incentives by government or private agencies are appropriate. Debates do occur over whether or not the requirements for gaining funding are too restrictive, whether or not the funding provided is adequate to meet program costs, and whether or not the short-term nature of most special funding makes the long-term maintenance of new or expanded programs feasible.

Financing policies that would restrict funding for residency programs in specialties deemed to have an excessive number of practitioners have been proposed and discussed but not invoked. Reducing the support for programs in such specialties by reimbursing teaching hospitals at a rate below the actual educational costs would probably diminish their educational quality but would not necessarily decrease the number of positions offered. Reducing support for some programs will not necessarily provide adequate financial resources to expand or develop programs in other specialties. This complex problem is discussed at greater length in the chapter on specialty distribution.

Complementing the reduction of reimbursement below cost for certain programs with reimbursement above cost for other programs could provide an incentive for teaching institutions to change the mix and size of their programs. To a degree, this is now accomplished through the special initiative funding programs discussed earlier. During the past decade, these programs caused an increase in primary care residencies and a plateau, albeit not a dramatic decrease, in the number of positions available in the other specialties.

Another financing policy should be considered. In the chapter on specialty distribution, it is pointed out that there is a growing trend for academic medical centers to consider that their graduate medical education programs should involve greater institutional responsibility for the mix and size of their graduate programs. Special financial incentives to academic centers and teaching hospitals to develop and implement mechanisms to adapt their programs to local, regional, and national manpower needs could be provided through grants.

> *Expansion of opportunities for graduate medical education in specialties deemed in short supply should continue to be encouraged by establishing financial incentive programs. Special funding should provide sufficient support to meet the cost of program development and maintenance and should not be so restrictive that it inhibits desirable innovations.*

AMBULATORY EDUCATIONAL SETTINGS

Graduate medical education is conventionally considered to be hospital-based. The terms "resident" and "residency" derive from the era when physicians-in-training were expected to be residents in the hospital as distinguished from their attending physician mentors who maintained private offices and visited the hospital to supervise and teach the resident physicians. Consequently, the attention and interest of both attending physicians and resident physicians focused on teaching and learning through caring for hospitalized patients. This still obtains and is still appropriate for graduate medical education programs in many specialties. Education and training in surgery, surgical specialties, and many medical and pediatric subspecialties are principally concerned with residents' acquiring the knowledge and skills to care for patients who must be hospitalized in the course of their care. These specialties use ambulatory clinics principally to assess patients prior to admission and to follow them for limited periods after admission. However, for other specialties—particularly for those with the goal of educating and training generalist physicians who will provide comprehensive, continuing care to patients who need not actually be hospitalized—the hospital-based resident physician concept of graduate medical education provides only part of the educational experience that is essential to their preparation. Ambulatory educational settings, in which patients with problems and complaints that do not commonly require hospitalization or those with chronic diseases that necessitate long-term care, are an essential resource. Their adequate development poses organizational and financial problems.

In the era when most medical educational settings were limited to where medical care was provided to indigents, the outpatient clinics of hospitals devoted to the care of charity patients were financed as part of the cost of hospital operations through tax appropriations to the institution or through philanthropy. Patients paid nothing or only a nominal fee. The outpatient clinics provided medical services both to patients who had to be hospitalized and those who did not require hospitalization, but there was little emphasis on comprehensive or continuing care. Both attending and resident physicians viewed service in the clinics as obligatory and necessary, but slight attention was paid to teaching the concepts or acquiring the skills to conduct a practice that would be principally office-based. These clinics did not compete with private physicians for fee-paying patients. They generally had more patients than they could care for effectively with the resources available.

To promote the development of the ambulatory graduate medical educational settings that are needed to teach residents how to care for patients requiring comprehensive and continuing care, adequate financial resources must be provided. Presently, the revenues generated in these settings are not adequate to support their patient care and educational missions. Mandatory cost allocation methods, a large number of unsponsored, indigent patients, and the lower productivity imposed by educational activities all make clinic financial support inadequate and threaten the viability of such outpatient services.

Allocation of costs—The ambulatory clinics for most graduate medical programs are housed in facilities owned and operated by teaching hospitals. Ancillary services such as laboratory and radiography are provided by the hospital's laboratory and X-ray departments. These and other departments that provide ancillary services are staffed, equipped, and managed principally to serve the requirements of hospitalized patients. They offer complex and sophisticated services on a 24-hour-a-day basis. Caring for most outpatients requires neither support services of this complexity and sophistication nor 24-hour availability. However, reimbursement policies of third-party payers—Medicare intermediaries in particular—make it difficult to negotiate different rates for ancillary services provided to outpatients as compared with inpatients. This means that ancillary services for the ambulatory clinics of teaching hospitals are more expensive than similar services provided by private physicians in their offices or provided by ancillary service facilities devoted solely to ambulatory patients in the community.

Cost-finding methods required by private and public payers burden teaching hospital outpatient facilities with allocations that exceed the actual costs for services and resources. For example, most clinic spaces are utilized eight hours a day, but allocation of their costs for housekeeping and maintenance are based upon 24-hour-a-day utilization.

These practices and their attendant reimbursement policies drive up the costs and prices of outpatient care in teaching institutions and make their ambulatory clinics noncompetitive with other community facilities. Patients who must pay their own way for outpatient care are reluctant to attend more expensive teaching clinics, and third-party payers are increasingly sensitive to paying base rates and ancillary service costs higher than those prevailing in the community.

Two possible approaches could solve this problem: (*a*) cost allocation practices and reimbursement policies could be changed so that teaching hospital ambulatory clinics are burdened only with the costs of the services that they need or utilize; or (*b*) teaching hospital-operated ambulatory clinics could be organized with support facilities and management systems that are suited to their special needs. Either approach would have the effect of raising the daily rates and costs of ancillary services for inpatients in teaching hospitals.

> *Third-party payers should restructure cost allocation methods and reimbursement policies to provide a financial incentive for residents' involvement in ambulatory care.*

Unsponsored indigent patients—Historically, teaching clinics provided medical services to patients who were unable independently to pay for medical care and who had no health insurance coverage. This is often still the case; and since adequate insurance coverage for outpatient services is less common than for inpatient services, many teaching clinic patients cannot provide a source of revenue for their care. Providing effective care to indigents is generally more expensive than to more affluent patients because of greater severity and chronicity of illness and difficulty in achieving compliance with therapeutic regimens. In order that these teaching clinics can accomplish both their patient care and educational missions, government subsidies are needed.

> *Teaching clinics with patient populations consisting of a large number of patients without resources to pay for their care should be subsidized by public agencies at a rate sufficient to ensure their accomplishing both their patient care and educational missions.*

Productivity—Modifications of cost allocation methods and subsidies for unsponsored patients cared for in a teaching hospital's ambulatory clinics can be better justified if the institution and its faculty utilize available personnel and resources effectively and thereby make the clinics as productive as possible. In graduate medical education teaching settings, productivity must be measured from the standpoints of both patient care and education. In ambulatory clinics, patient care productivity is measured by the length of time patients must spend to be cared for and by the number of patients seen per unit of time. Educational productivity is difficult to measure and ultimately depends upon demonstrating that residents achieve the knowledge, skills, and clinical judgment needed to make them proficient practitioners of their specialty. In both inpatient and outpatient settings, residents must be given time to interview and examine their patients, integrate their findings, arrive at decisions, and order and perform diagnostic and therapeutic procedures. In ambulatory teaching clinics, there is always time pressure. Revenue to support teaching clinics is dependent upon the number of patients seen per unit of time. As a result, the time allowed may not be sufficient to permit the desired level of learning.

It is difficult to estimate how much additional time is required to care for a patient in a teaching clinic as compared with a nonteaching clinic purely because residents need to be given adequate time to benefit educationally from their patient contacts. There is agreement that junior, less sophisticated and less skilled residents require a longer time with their patients than more senior residents. A well organized clinic, staffed by junior and senior residents and an effective supervising faculty, can be quite productive, but rarely can a teaching clinic equal the productivity of a nonteaching clinic. Minimizing the loss in productivity requires rigorous attention to organizational detail, a clear understanding of and agreement with the goals of education in the ambulatory clinic, and the provision of appropriate ancillary services without unnecessary delay.

> *Graduate medical education faculties should develop and articulate the educational goals to be accomplished in ambulatory teaching settings. Clinics should be organized, staffed, and managed to minimize loss of patient care productivity while still allowing sufficient time for residents to attain the educational goals.*

Financial support—The financial support of ambulatory teaching clinics is increasingly dependent upon revenues generated through payments by third-party insurers. This is particularly true of clinics devoted to establishing an educational environment for teaching residents to provide continuing, comprehensive care to patients who do not need to be hospitalized. Such clinics must attract and hold a population of patients dependent upon the clinics for their ongoing care and willing to participate in their educational missions. The clinics also must establish a mode of operation that will provide residents with experience in organizing ambulatory care in an effective and efficient way. To accomplish this, teaching clinics should be reasonably competitive with nonteaching clinics. As previously described, the competitiveness of ambulatory clinics is significantly handicapped by cost allocation methods, by unsponsored, indigent patients, and by the impact of education on clinic productivity. Each of these problems increases the cost and price of ambulatory services. Even if cost allocation methods are changed and indigent patients are reimbursed for care paid for, the added educational mission will result in teaching clinic costs that exceed the charges made by office-based practitioners. Governmental and private insurance programs should recognize and pay these costs.

Third-party payers should pay for the care provided to their beneficiaries in teaching clinics and also pay reasonable educational costs.

Until those reforms are accomplished, the need for special subsidies for teaching clinics must be considered. Special subsidies are now provided by both state and federal governments and private foundations to stimulate the development of primary care residency programs. These programs are absolutely dependent upon effective ambulatory educational settings. Subsidies help offset costs engendered by reduced productivity, support special services and personnel needed to demonstrate and teach optimal approaches to patient care, and permit residents to acquire skills in assessing patient needs and in counseling them without the excessive utilization of diagnostic and therapeutic procedures. As mentioned earlier, impaired productivity, as measured by the number of patients seen per unit, should be minimized by attention to organization and staffing. The appropriateness and density of special services and personnel not usually available in practitioners' offices should be scrutinized and not exceed that needed to accomplish agreed-upon educational goals. The problem with teaching residents to be judicious in their utilization of procedures and generous in their utilization of time in employing their clinical skills to evaluate and counsel patients is directly related to the prevailing policy of reimbursing much more generously for procedures than for time spent with patients. This problem is discussed at length in the chapter on specialty distribution.

Health maintenance organizations have been slow to accommodate graduate medical education in their ambulatory settings. These prepaid clinics, which must negotiate with their subscribers on a prospective cost basis, have viewed assuming an educational mission as adding a financial burden too great to allow them to compete with indemnity insurance plans which reimburse for hospital costs and usual, customary, and reasonable professional fees. This reluctance is regrettable because it denies access to a valuable educational resource for graduate medical education and denies residents the opportunity of learning to care for patients on the basis of prepayment rather than on the basis of a fee for services rendered.

The financial problems posed for health maintenance organizations by assuming an educational mission should be analyzed, and financial policies that will promote the development of graduate medical education programs should be adopted.

Reimbursement policies for payment of fees for professional services by faculty in teaching clinics pose a special problem. Clinics in which residents are taught to provide comprehensive, continuing care to patients must establish a milieu in which patients view residents as their personal physicians. Faculty members must, on the one hand, ensure that residents are supervised, are guided, and learn from their patient contacts while, on the other, they must encourage the development of personal relationships between residents and patients. Under these circumstances, patients may not view or recognize faculty members as their identifiable personal physicians. Under the rule established by the Social Security Administration's Intermediary Letter No. 372 for Medicare reimbursement, a faculty member must be personally identifiable as a beneficiary's personal physician. This requirement, which does not interfere with education in most instances in the hospital, does interfere with education in the clinic.

> *Faculty supervisors and residents should develop modes of interaction that ensure that supervisors contribute to the care of patients and exercise personal control over decisions about the management of patients. In a clinic that requires residents to establish long-term relationships with patients in order that they may develop skills in providing continuity of care, faculty who make direct contributions to the care of patients should be eligible for reimbursement by third-party payers for their professional services, even though patients may identify primarily with the resident. Faculty providing educational and supervisory services should be paid for these efforts on a cost basis through reimbursement to the clinic rather than through charges for professional services.*

PREVENTIVE MEDICINE

Graduate medical education in preventive medicine—general preventive medicine, public health, occupational medicine, and aerospace medicine—is different from education for all other specialties. The attainment of the knowledge and skills needed to be proficient in these specialty areas does not require direct involvement with the care of patients in the hospital or conventional outpatient clinics. This separation of preventive medicine from hospital services means that programs in preventive medicine do not have access to the funds generated by hospitals to support their educational costs.

In a recent report by the American College of Preventive Medicine (38), the source of financing for programs was delineated. The total amount of support for 22 general preventive medicine residencies in 1979–80 was $1,751,480. Sources of funds were university general funds, 38 percent; federal funds (distributed among seven different categories), 36 percent; state general funds, 18 percent; private foundations, 5 percent; industry, 1 percent; and all others, 2 percent. Ten public health residency programs reported that 75 percent of their total of $182,119 came from state funds. For occupational medicine, 10 programs reported that 71 percent of their $1,412,914 of support came from National Institute of Occupational Safety and Health Educational Resource Center grants. Aerospace medicine residency programs and federally operated programs wholly funded by the government were excluded from the analysis.

The financing of preventive medicine, public health, and occupational medicine residency programs is much more dependent upon direct support from public agencies, both state and federal, than are programs in other specialties. This dependence places a special responsibility on these agencies to ensure that program support is adequate both to provide the number of positions needed and to permit a quality of education that will attract young physicians into this career area. There is increasing national concern with the need to place more emphasis on preventive measures in the personal health of individuals and to protect susceptible populations from environmental health hazards. The Graduate Medical Education National Advisory Committee predicts a significant shortfall in physicians in all areas of preventive medicine in 1990. The rising expectation that prevention of disease should be of higher priority, coupled with the anticipated shortage of preventive medicine specialists, constitutes a challenge to both the public and private sector. Greater resources for graduate medical education programs in preventive medicine will be needed to meet this challenge.

CONTAINING THE COST OF GME

Containing the cost of graduate medical education should be approached at both national and local levels. At the national level, certifying boards and residency review committees should pay particular attention to the costs of modifications in certification requirements and the standards for program accreditation. The American Board of Medical Specialties and the Liaison Committee on Graduate Medical Education have instituted policies requiring certifying boards and residency review committees to provide analyses of the effect of changes in their specifications on educational quality and cost. This policy should continue and should be implemented effectively.

Only institutions with accredited programs in graduate medical education should be eligible for reimbursement for their educational programs. Financing graduate education in substandard programs is a poor investment and an unjustifiable expenditure. The chapter on National Standards Formulation and Accreditation contains recommendations to improve the accreditation of graduate medical education.

The evolution of new specialties, specialty boards, and training programs to prepare new types of specialists increases the cost of graduate medical education. In this era, the impetus to promote the development of new specialties has come, in part, from government. Through special appropriations, training programs in new specialties have been initiated, usually without consideration of their long-term cost implications and their need for future stable funding. The Coordinating Council on Medical Education sought to establish a mechanism so that proposals for new specialties and specialty boards are thoroughly scrutinized from the standpoint of both the appropriateness of specialty status and societal needs. The private sector should proceed with this effort and should attempt to assess the impact of the introduction of new specialties on the cost of graduate medical education.

> *Proposals to change certification requirements or accreditation standards in graduate medical education should be evaluated to determine their effect on both educational quality and cost.*
>
> *Proposals to initiate new types of training programs and develop new specialties should be considered from the standpoints of their effect on medical services and their effect on the cost of graduate medical education.*

At the local level, institutions that sponsor graduate medical education programs should develop internal mechanisms to assess the extent to which their educational resources are used effectively and their programs meet the principal goal of graduate medical education and whether the organization and staffing of their teaching services promote both acceptable patient care and educational productivity. Program directors and graduate medical faculties should expect to justify their expenditures of resources and demonstrate that their programs are providing the education and training needed by residents to accomplish the goals of graduate medical education.

As academic medical centers expand their programs, hospitals and clinics not previously involved in graduate medical education are becoming engaged with an educational as well as a patient care mission. This utilization of existing facilities, rather than construction of new facilities, is a cost saving. In negotiating with hospitals and clinics, academic centers should attempt to ensure that these facilities provide effective educational settings at a reasonable cost. It is unlikely that the utilization of such facilities will save much money beyond that saved by eliminating capital investments. Programs that meet acceptable standards must pay for the educational costs detailed earlier. These costs do not differ much across institutional settings.

Effective cost containment for medical and hospital services goes beyond concerns about the cost of graduate medical education. It is essential that residents be taught to utilize the growing armamentarium of useful and effective diagnostic and therapeutic technological procedures in a manner that provides optimal patient care at the least cost. An emphasis on cost containment during graduate medical education should have lasting impact upon the approaches residents will use when they become independent practitioners. At present, many teaching hospitals involve residents in audit committees and hold teaching rounds that emphasize the cost differences in applying available resources to patient care problems. Teaching hospitals should engage in and promote research directed toward the cost effective use of medical care resources. In addition, graduate faculty members should make conscious efforts to demonstrate to the residents they supervise that technological procedures should be employed only when they provide a justifiable benefit to patients.

> *Medical schools and their associated teaching hospitals should develop internal mechanisms to determine whether their educational resources are effectively used.*
>
> *In developing new educational settings in hospitals and clinics not previously engaged in education, academic centers should attempt to ensure that effective programs are achieved at a reasonable cost.*
>
> *Teaching hospitals should increase their emphasis on research related to the effective use of resources and educating residents to utilize diagnostic and therapeutic procedures with due consideration of their contributions to optimal patient care and their costs.*

Future Changes

The financing and organization of the medical care field is in an evolutionary stage. Starting from the era when most physicians provided their services as solo practitioners and patients paid both professional and hospital expenses out-of-pocket, it has progressed to the point where group practices are common and both professional fees and hospital expenses are in large measure paid by third-party payers. Some anticipate universal health insurance in the future.

Changes in the financing and organization of medical care that have already occurred provide signals of potential problems for the financing of graduate medical education in the future. As mentioned above, health maintenance organizations have been reluctant to become engaged in graduate medical education because their productivity is impaired with an involvement with education.

Investor-owned hospitals are also unwilling to provide graduate medical education. There has been a substantial growth in the number of beds operated by investor-owned hospitals and in the number of hospital management corporations (39). These new organizations are able to provide medical services at an attractive price utilizing the professional services of fully prepared physicians who have been educated and trained elsewhere in the system. Under present financing policies, they have little reason to become involved in graduate medical education.

In the future, it is likely that an increasing proportion of medical services will be provided by large organizations, both investor-owned and nonprofit, which, because of their limited patient care mission, their avoidance of research and development, and their lack of involvement with medical education, are able to price their services below those of the teaching hospitals that are the essential institutions for graduate medical education.

Providers of medical service are increasingly attempting to control costs by promoting competitive pricing. Proposals to stimulate competition and reduce reliance upon regulation for cost control have thus far not dealt realistically with the continued support of teaching hospitals and their special educational and research missions. Those responsible for determining financing policies and for the provision of graduate medical education must recognize that these developments pose a significant threat to the maintenance of adequate resources for graduate medical education. As strategies to promote competition evolve, policymakers must be acutely aware of the need to preserve the institutions that provide graduate medical education and ensure that the level of educational quality, patient care, and scholarly inquiry expected of them is not subverted by the desire to effect short-term savings.

Conference Discussion

Dr. Edward Stemmler reported for the six groups of 71 individuals who discussed the financing of graduate medical education.

He restated the position of the Working Group on Financing Graduate Medical Education that the funding of graduate medical education through the general operating revenues of teaching hospitals should continue. The conference discussion groups were pleased to note the statement basically supporting this position which Mr. Walter J. McNerney, president of the Blue Cross and Blue Shield associations, sent to the Association of American Medical Colleges for inclusion in the conference agenda. In the discussion groups, similar expressions of support were offered on this point by representatives of the commercial insurance carriers.

The discussions generally reaffirmed the emphasis that was placed on the maintenance of multiple funding sources. There was agreement that because medical insurance is ubiquitous, payment of the costs of graduate medical education from health insurance funds distributes its support fairly across the population.

Conferees expressed concerns about the long-term prospects for maintaining stable funding for graduate medical education. Regulatory efforts by the federal government during the past decade to control Medicare and Medicaid expenditures have significantly threatened the financing of teaching hospitals. New initiatives to promote price competitive marketing of medical services were viewed as a potential threat to the support of graduate medical education because hospitals and physicians not engaged in teaching will be able to price their services below those provided by teaching hospitals and their faculties. If major purchasers of medical services opt to use providers not involved in education, teaching hospitals could be seriously impaired in their ability to accomplish their educational mission.

The options of supporting graduate medical education with professional fee income or having the residents bear the cost of their own education were discussed, but for many of the reasons presented by the working group they could not be developed to a point of viable implementation.

The possibility of supporting graduate medical education through a separate fund derived from tax revenues was explored. Money for such a fund could be derived either from general federal revenues or from a surcharge on payments for medical services.

Finally, conferees expressed the view that the report neglected the need for special resources to support the education of clinical investigators. Research training grant stipends now provided to residents who desire to develop their investigative skills frequently require that aspirants to an academic career take a reduction in income during this period of their preparation. This lack of strong financial support for future clinical investigative talent was deplored.

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Conclusion

The decision by the Association of American Medical Colleges to undertake a major review of the status of graduate medical education in the United States proved to be timely. During the three years that the Task Force on Graduate Medical Education and its five Working Groups deliberated and developed the concepts and recommendations contained in the report, there were many opportunities for interaction with other groups and agencies that impinge on the complex environment of graduate medical education. As a result, implementation of several task force recommendations has already begun:

1. The Accreditation Council for Graduate Medical Education has incorporated the changes in residency program designations into the General Requirements section of the "Essentials of Accredited Residencies." This will establish a transitional first-year program for students who desire a broad clinical year before entering a narrow specialty or who desire further clinical experience before deciding about their career direction.

2. The National Resident Matching Program has modified its policies and procedures to improve its services to both students and programs. The modifications will tend to reduce the pressures on students to make premature decisions about their graduate medical education.

3. Task force recommendations were, in part, instrumental in the transformation of the Liaison Committee on Graduate Medical Education into the Accreditation Council for Graduate Medical Education. The agreement by the sponsoring organizations to changes that will improve the staff support and ensure financial independence of the Accreditation Council for Graduate Medical Education will permit it to discharge its responsibilities more expeditiously. Although all of the task force recommendations relating to these areas were not specifically implemented, the changes are in a direction consistent with its views.

Fortuitously, the AAMC invitational conference on September 29–30, 1980, to discuss the report with 122 representatives from other organizations and agencies coincided with the public release of the summary report of the Graduate Medical Education National Advisory Committee. That federally appointed committee had been working concurrently to advise the Secretary of Health and Human Services about federal concerns with graduate medical education. The task force and working groups had shared information with the Graduate Medical Education National Advisory Committee. The coincidence of the release of the Graduate Medical Education National Advisory Committee report and the conference heightened the awareness of those involved with graduate medical education of the many issues that still must be resolved.

Graduate medical education in the United States is now a formal, structured period for the education and training of essentially all physicians who enter medical practice. It is as important as the undergraduate phase in the preparation of proficient practitioners capable of further professional development throughout their practicing careers. Graduate education also is an important stage in the development of competent clinical investigators and academicians. The provision of graduate medical education is now predominantly the responsibility of medical schools and associated teaching hospitals. The faculty for the graduate phase has become largely congruent with the faculty responsible for the undergraduate phase of medical education.

The organization of graduate medical education as disciplinary educational programs for the education and training of physicians to become qualified for certification as specialists by independent certifying boards is basically sound. However, this programmatic focus has caused an undesirable degree of insularity. In medical schools and teaching hospitals insufficient institutional attention is paid to the overall quality of graduate programs. The accreditation system has perpetuated this insularity by confining the assessment of the quality of graduate medical education to individual programs. The overall educational environment of the institutions that sponsor programs has not been sufficiently emphasized.

The transition between undergraduate and graduate medical education has become a complex problem for medical students, their advisers, and graduate program directors. The dearth of useful information about graduate programs available to medical students and the pressures of the process through which they obtain their residencies underlie the problem. The structure and content of the first graduate year and its relationship to the development of basic clinical skills by students during their undergraduate phase are also concerns. Implementation of the recommendations in Chapter 3 to improve the information and counseling available to students and to modify the selection process should reduce the frustrations of all concerned.

Graduate medical education is the period in which newly graduated physicians develop their careers as specialists. These range from specializing as generalists to subspecializing in fields that concentrate on an organ system or a disease process. Influencing the distribution of physicians among various specialties by changing graduate medical education is often viewed as an expedient approach to changing the characteristics of medical practice in the United States. In Chapter 5, the evolution of specialized medical practice is described, and the limited ability of graduate institutions to modify their programs to influence specialty distribution and medical practice is delineated. Institutional obligations to be responsive to the needs to modify the distribution and medical practice of specialists are discussed. The futility of attempting to change medical practice patterns solely by modifying the distribution of specialists being educated in graduate programs is emphasized. The incentives to specialized forms of medical practice are to a major degree established by reimbursement policies for professional services that now provide a premium to physicians who perform diagnostic and therapeutic procedures. Simultaneous and complementary changes are needed in reimbursement policies for professional services if changes in the mix and type of graduate positions to be made available are contemplated.

Graduate medical education is largely financed through third-party insurer reimbursements to teaching hospitals. Significant contributions to its financial support also derive from federal programs, such as the Veterans Administration, and by states and municipalities. In Chapter 6, it is recommended that graduate medical education continue to be funded through reimbursements to teaching hospitals as a reasonable investment by third-party insurers on the part of the public because well qualified physicians will be needed for future generations and because residents contribute to the quality of care in teaching hospitals. The task force focused on the complex issues that surround the financing of graduate medical education, the status of residents, the compensation of teaching physicians, the financial problems of ambulatory educational settings, the need for cost containment, and the potential effect of changes in the organization of medical care delivery.

Graduate medical education for all physicians is essential, and its provision is the responsibility of academic institutions. The task force's effort was directed not only to the academic community but also to the practicing physicians and the public and private agencies that support and shape the policies affecting graduate medical education. Through the continued implementation of the recommendations contained in this report, the organization, quality, and financial support of graduate medical education will be improved so that all U.S. medical school graduates can provide the quality and scope of medical care that the public expects.

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Appendix 1

Accreditation of Graduate Medical Education, 1981

In September 1980, after a series of conferences among the senior elected officers and chief executive officers of the American Board of Medical Specialties, American Medical Association, American Hospital Association, Association of American Medical Colleges, and Council of Medical Specialty Societies, the five organizations announced plans to reorganize the accreditation system to be effective January 1, 1981. The old organization and relationships are shown in Figure 1.1; the new organization and relationships are shown in Figure 1.2.

The Coordinating Council on Medical Education was abolished. In its place, the Council for Medical Affairs was established with representation by the two top elected officers and the chief executive officers of each organization. The Council for Medical Affairs provides a forum for discussion of medical education issues and other matters of mutual concern to the organizations. The Council for Medical Affairs has no direct role in accreditation policy.

The Liaison Committee on Graduate Medical Education was transformed into the Accreditation Council for Graduate Medical Education. Representation in the Accreditation Council for Graduate Medical Education is shown in Figure 1.2. Staff services are provided by the American Medical Association under the conditions of a letter of agreement. Revenues to pay for the cost of accreditation are generated by charges to programs. This is a combination of an annual charge based on the number of positions in a program and an additional charge for periodic review and accreditation. Parents of the Accreditation Council for Graduate Medical Education pay the cost of Accreditation Council for Graduate Medical Education meetings and policy development activities.

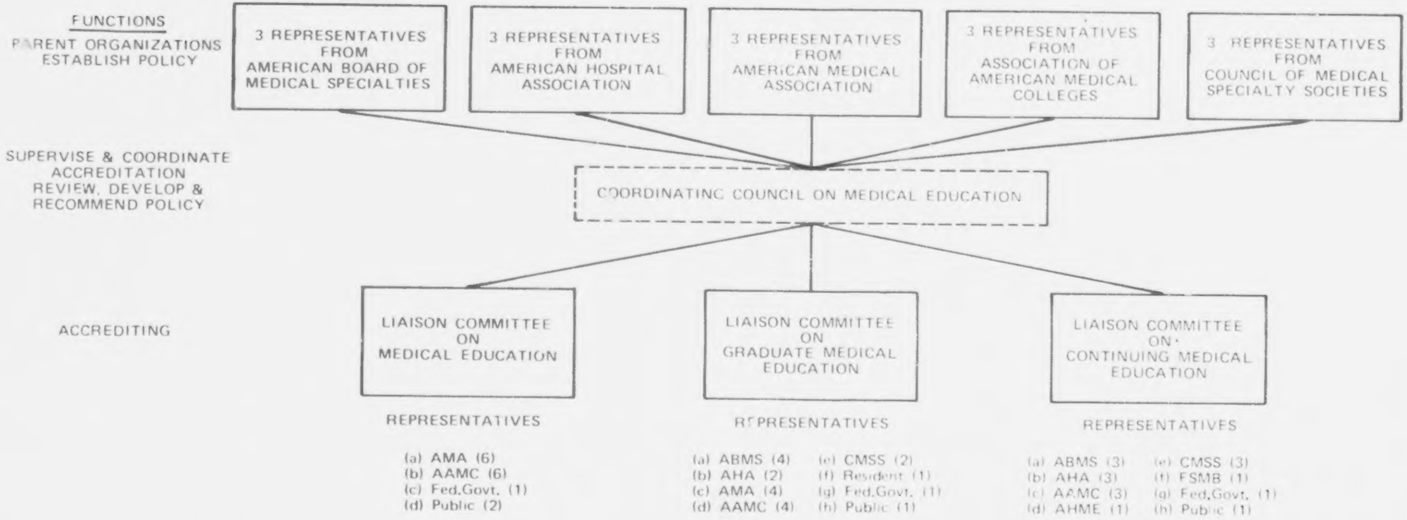
The Accreditation Council for Graduate Medical Education has the authority to accredit graduate medical education programs that have been recommended for accreditation by residency review committees. It establishes policies and procedures for residency program accreditation. Residency review committees may forward their accreditation recommendations to the Accreditation Council for Graduate Medical Education for final action, or a residency review committee may request that the authority to accredit be delegated to it. The Accreditation Council for Graduate Medical Education grants such authority on a time-limited basis, subject to monitoring and periodic review. Program directors are now informed of residency review committee recommendations or accreditation decisions after each residency review committee meeting. This eliminates delays that were caused by waiting until the Liaison Committee on Graduate Medical Education took action, a constant source of irritation and frustration.

The Accreditation Council for Graduate Medical Education is responsible for the General Requirements section of the "Essentials of Accredited Residencies." Changes in the General Requirements must be unanimously approved by the five parents. Residency review committees are responsible for the Special Requirements subject only to review and recommendations by their sponsoring organizations.

Residency review committee sponsors no longer have the authority to approve or disapprove Special Requirements. The Accreditation Council for Graduate Medical Education approves all Special Requirements.

The structure and functions documents establishing the operations of residency review committees are developed by the residency review committees within guidelines established by the Accreditation Council for Graduate Medical Education and are subject to approval by the Accreditation Council for Graduate Medical Education. The Accreditation Council for Graduate Medical Education is responsible for the procedures for appealing adverse accreditation decisions.

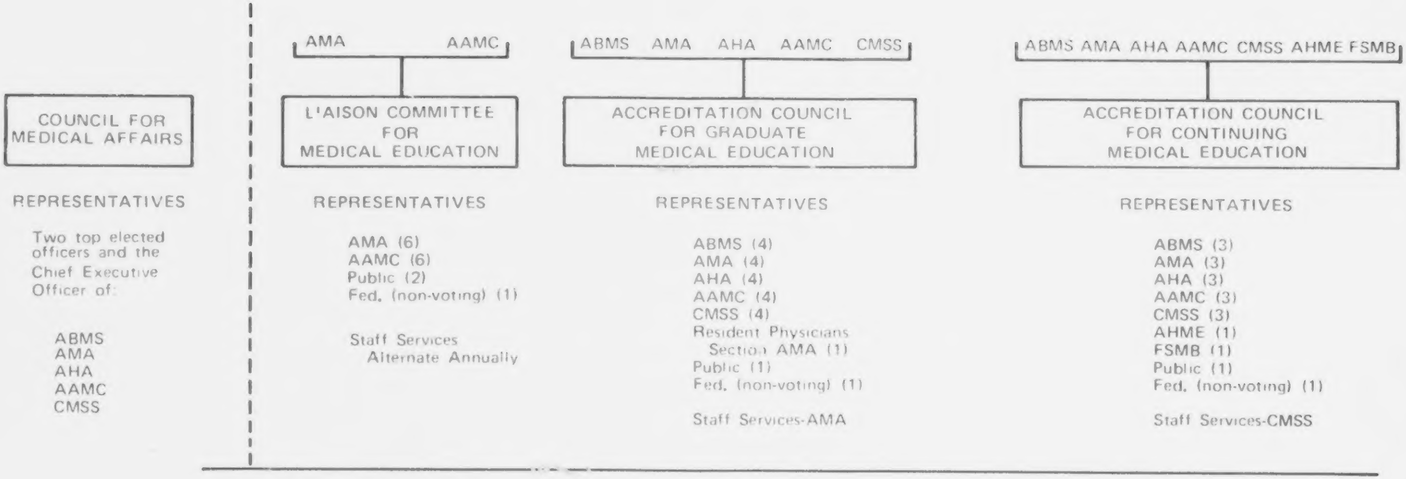
Only specified items require unanimous approval by the parent organizations. The General Requirements of Accredited Residencies and the bylaws must be ratified by all parent organizations. Action within 180 days of receipt is required. A parent organization failing to act within that time is considered to have given approval. Fiscal policies (including fees, service charges, member assessments, grant applications, and the annual budget) and authorizations of new programs and activities must be approved by two-thirds of the members of the Accreditation Council for Graduate Medical Education present and voting. Any parent organization may request within 45 days of the vote the submission of any item so approved to all parent organizations. Each parent organization then must approve the item before it becomes effective. A parent organization must act within 90 days of receipt of such an item or approval is assumed.


FUNCTIONS
PARENT ORGANIZATIONS ESTABLISH POLICY
SUPERVISE & COORDINATE ACCREDITATION REVIEW, DEVELOP & RECOMMEND POLICY
ACCREDITING
3 REPRESENTATIVES FROM AMERICAN BOARD OF MEDICAL SPECIALTIES
3 REPRESENTATIVES FROM AMERICAN HOSPITAL ASSOCIATION
3 REPRESENTATIVES FROM AMERICAN MEDICAL ASSOCIATION
3 REPRESENTATIVES FROM ASSOCIATION OF AMERICAN MEDICAL COLLEGES
3 REPRESENTATIVES FROM COUNCIL OF MEDICAL SPECIALTY SOCIETIES
COORDINATING COUNCIL ON MEDICAL EDUCATION
LIAISON COMMITTEE ON MEDICAL EDUCATION
REPRESENTATIVES
(a) AMA (6)
(b) AAMC (6)
(c) Fed.Govt. (1)
(d) Public (2)
LIAISON COMMITTEE ON GRADUATE MEDICAL EDUCATION
REPRESENTATIVES
(a) ABMS (4)
(b) AHA (2)
(c) AMA (4)
(d) AAMC (4)
(e) CMSS (2)
(f) Resident (1)
(g) Fed.Govt. (1)
(h) Public (1)
LIAISON COMMITTEE ON CONTINUING MEDICAL EDUCATION
REPRESENTATIVES
(a) ABMS (3)
(b) AHA (3)
(c) AAMC (3)
(d) AHME (1)
(e) CMSS (3)
(f) FSMB (1)
(g) Fed.Govt. (1)
(h) Public (1)

AMA	American Medical Association
AAMC	Association of American Medical Colleges
ABMS	American Board of Medical Specialties
AHA	American Hospital Association
CMSS	Council of Medical Specialty Societies
AHME	Association of Hospital Medical Education
FSMB	Federation of State Medical Boards

SOURCE: American Board of Medical Specialties. *Annual Report, 1978-1979.* Evanston, Illinois: American Board of Medical Specialties, 1979. (Revised 1/1980, Association of American Medical Colleges).

FIGURE 1.1
Accreditation bodies for medical education, 1980.


COUNCIL FOR MEDICAL AFFAIRS
REPRESENTATIVES
Two top elected officers and the Chief Executive Officer of:
ABMS
AMA
AHA
AAMC
CMSS
AMA
AAMC
L'AISON COMMITTEE FOR MEDICAL EDUCATION
REPRESENTATIVES
AMA (6)
AAMC (6)
Public (2)
Fed. (non-voting) (1)
Staff Services Alternate Annually
ABMS
AMA
AHA
AAMC
CMSS
ACCREDITATION COUNCIL FOR GRADUATE MEDICAL EDUCATION
REPRESENTATIVES
ABMS (4)
AMA (4)
AHA (4)
AAMC (4)
CMSS (4)
Resident Physicians Section AMA (1)
Public (1)
Fed. (non-voting) (1)
Staff Services-AMA
ABMS AMA AHA AAMC CMSS AHME FSMB
ACCREDITATION COUNCIL FOR CONTINUING MEDICAL EDUCATION
REPRESENTATIVES
ABMS (3)
AMA (3)
AHA (3)
AAMC (3)
CMSS (3)
AHME (1)
FSMB (1)
Public (1)
Fed. (non-voting) (1)
Staff Services-CMSS

ABMS – American Board of Medical Specialties
AMA – American Medical Association
AHA – American Hospital Association
AAMC – Association of American Medical Colleges
CMSS – Council of Medical Specialty Societies
AHME – Association of Hospital Medical Educators
FSMB – Federation of State Medical Boards

FIGURE 1.2
Accreditation bodies for medical education, 1981.

Appendix 2

Analysis of Internships and Residencies Offered and Filled by U.S. and Foreign Medical School Graduates, 1927–1976

Year	No. of Hospitals	Residencies			Internships		
		Offered	Filled		Offered	Filled	
			USG	FMG		USG	FMG
1927	270	1,699	—	—	4,952	—	—
1930	338	2,028	—	—	5,496	—	—
1935	392	2,563	—	—	6,443	—	—
1940	587	5,118	—	—	6,791	—	—
1945	734	8,930	—	—	8,429	—	—
1950	1,079	19,364	13,145	1,350	9,370	6,308	722
1955	1,201	26,516	17,251	4,174	11,616	7,744	1,859
1960	1,307	32,786	20,265	8,182	12,547	7,362	1,753
1965	1,429	31,898	22,765	9,133	12,954	7,309	2,361
1970	1,517	46,584	26,595	12,968	15,354	8,213	3,339
1972*	1,562	51,658	30,610	14,471	13,650	7,239	3,924
1974*	1,593	57,681	37,310	15,373	10,441	7,071	2,756
1976*	1,702	65,046	45,065	15,496	0	—	—

* From 1971 to 1975 an increasing number of first-year positions were offered and filled as first-year residencies rather than internships; no internships were offered in 1976.

SOURCE: Annual medical education reports published by the American Medical Association.

Appendix 3

Analysis of Residencies by Specialty of Program, 1979

Specialty of Program	October 1979		July 1979
	No. of Accredited Programs	Percent of Total Programs	Residents on Duty
Allergy and immunology	46	1.0	132
Anesthesiology	163	3.5	2,473
Colon and rectal surgery	27	0.6	44
Dermatology	97	2.1	789
Dermatopathology	14	0.3	15
Family practice	366	7.9	6,420
Internal medicine	443	9.6	16,531
Neurological surgery	94	2.0	547
Neurology	120	2.6	1,220
Nuclear medicine	89	1.9	165
Obstetrics/gynecology	306	6.6	4,587
Ophthalmology	163	3.5	1,509
Orthopedic surgery	188	4.1	2,478
Otolaryngology	117	2.5	1,014
Pathology	358	7.7	2,499
Blood banking	18	0.4	21
Forensic pathology	36	0.8	24
Neuropathology	[illegible]	1.2	49
Pediatrics	253	5.5	5,301
Pediatric allergy	25	0.5	64
Pediatric cardiology	51	1.1	125
Physical medicine and rehabilitation	65	1.4	462
Plastic surgery	109	2.3	406
Preventive medicine, general	32	0.7	189
Aerospace medicine	3	0.1	30
Occupational medicine	26	0.6	72
Public health	18	0.4	21
Psychiatry	232	5.0	3,934
Child psychiatry	130	2.8	542
Radiology, diagnostic	220	4.7	2,905
Radiology, diagnostic (nuclear)	30	0.6	54
Radiology, therapeutic	105	2.3	396
Surgery	352	7.6	7,968
Pediatric surgery	17	0.4	24
Thoracic surgery	101	2.2	270
Urology	162	3.5	1,052
Total	4,630	100.0	64,332

SOURCE: *Directory of Residency Training Programs, 1979–80*. Chicago: American Medical Association, 1980.

Appendix 4

Veterans Administration Allocation of Residency Positions by Specialty of Program, 1978-79—1980-81

Specialty of Program	1978-79		1979-80		1980-81	
	No. Positions Allocated	Percent of Total	No. Positions Allocated	Percent of Total	No. Positions Allocated	Percent of Total
Allergy and immunology	13.0	0.2	13.0	0.2	13.0	0.2
Anesthesiology	187.5	2.5	192.5	2.6	211.0	2.7
Colon and rectal surgery	1.0	0.0	1.0	0.0	2.0	0.0
Dermatology	132.2	1.8	128.2	1.7	128.5	1.7
Family practice	74.0	1.0	107.0	1.4	119.5	1.5
Internal medicine	2,476.6	33.3	2,563.5	34.0	2,615.5	34.0
Cardiovascular disease	215.2	2.9	205.5	2.7	204.0	2.7
Endocrinology and metabolism	74.2	1.0	72.2	1.0	71.7	0.9
Gastroenterology	195.5	2.6	176.5	2.3	168.5	2.2
Hematology	119.0	1.6	46.5	0.6	46.5	0.6
Hematology/oncology	0.0	0.0	56.0	0.7	60.0	0.8
Infectious disease	71.5	1.0	70.0	0.9	83.0	1.1
Nephrology	101.1	1.4	106.6	1.4	110.6	1.4
Oncology	0.0	0.0	21.5	0.3	20.5	0.3
Pulmonary disease	146.0	2.0	143.0	1.9	137.5	1.8
Rheumatology	59.5	0.8	58.5	0.8	61.5	0.8
Neurosurgery	86.1	1.2	80.5	1.1	77.5	1.0
Neurology	286.7	3.9	291.5	3.9	304.0	4.0
Nuclear medicine	56.0	0.8	54.0	0.7	57.0	0.7
Ophthalmology	206.5	2.8	203.0	2.7	214.5	2.8
Orthopedic surgery	250.5	3.4	249.5	3.3	259.5	3.4
Otolaryngology	167.0	2.2	165.0	2.2	172.0	2.2
Pathology	305.1	4.1	302.0	4.0	309.0	4.0
Physical medicine and rehabilitation	95.0	1.3	106.5	1.4	113.5	1.5
Plastic surgery	58.5	0.8	56.5	0.8	58.0	0.8
Psychiatry	616.8	8.3	616.5	8.2	596.0	7.8
Radiology, general	0.0	0.0	19.0	0.3	7.0	0.1
Radiology, diagnostic	354.5	4.8	305.5	4.1	332.5	4.3
Radiology, therapeutic	0.0	0.0	24.0	0.3	24.0	0.3
Surgery	835.5	11.2	837.0	11.0	850.5	11.1
Thoracic surgery	52.0	0.7	57.5	0.8	51.0	0.7
Urology	202.5	2.7	201.5	2.7	206.5	2.7
Other	2.0	0.0	0.0	0.0	0.0	0.0
Total	7,441.0	100.3*	7,531.0	100.1*	7,685.8	100.1*

* Figures over 100 percent are due to rounding.

Note: V.A. funding for residencies in fiscal 1979 was $127,579,000; for 1980, $142,722,000, and for 1981, $151,466,000.

SOURCE: Department of Medicine and Surgery, Veterans Administration.

Appendix 5

Distribution of U.S. Medical School Graduates in First-Year Residencies, by Type of Program, 1976–1978

Type of Program	1976		1977		1978	
	No.	Percent	No.	Percent	No.	Percent
Family practice	1,652	12.8	1,721	12.8	1,968	13.8
Internal medicine	4,713	36.1	4,827	36.0	4,997	35.1
Pediatrics	1,290	9.9	1,375	10.3	1,399	9.8
Obstetrics/gynecology	711	5.6	759	5.6	850	6.0
Medical specialties	681	5.4	722	5.4	742	5.3
Dermatology	(11)	(0.1)	(10)	(0.1)	(8)	(0.1)
Neurology	(60)	(0.5)	(64)	(0.5)	(61)	(0.4)
Ophthalmology	(46)	(0.3)	(56)	(0.4)	(56)	(0.4)
Psychiatry	(564)	(4.5)	(592)	(4.4)	(617)	(0.4)
General surgery	1,672	12.7	1,710	12.8	1,814	12.8
Surgical specialties	198	1.5	254	1.9	334	2.4
Neurosurgery	(16)	(0.1)	(21)	(0.2)	(24)	(0.2)
Orthopedics	(127)	(1.0)	(167)	(1.2)	(231)	(1.6)
Otolaryngology	(29)	(0.2)	(27)	(0.2)	(37)	(0.3)
Urology	(26)	(0.2)	(39)	(0.3)	(42)	(0.3)
Support specialties	782	6.1	896	6.7	943	6.6
Anesthesiology	(173)	(1.4)	(211)	(1.6)	(225)	(1.6)
Pathology	(305)	(2.4)	(351)	(2.6)	(317)	(2.2)
Physical medicine	(19)	(0.1)	(30)	(0.2)	(28)	(0.2)
Radiology	(273)	(2.1)	(295)	(2.2)	(349)	(2.5)
Other	(12)	(0.1)	(9)	(0.1)	(14)	(0.1)
Flexible	1,273	9.9	1,141	8.5	1,160	8.2
Subtotal	12,972	100.0	13,405	100.0	14,207	100.0
None	129	—	167	—	182	—
Unknown	460	—	35	—	186	—
Total Graduates	13,561	—	13,607	—	14,575	—

SOURCE: National Resident Matching Program.

Appendix 6

Nationwide Resident Stipends, by Year of Training, 1979–80 and 1978–79

Year of Training	1979–80 Nationwide					1978–79 Nationwide				
	No. of Hospitals	Stipends				No. of Hospitals	Stipends			
		25th Percentile	Median	Mean	75th Percentile		25th Percentile	Median	Mean	75th Percentile
1st Post-M.D. Yr.	319	$13,708	$14,775	$14,811	$15,572	319	$13,000	$13,950	$13,965	$14,750
2nd Post-M.D. Yr.	320	14,700	15,795	15,832	16,640	320	13,822	14,859	14,948	15,725
3rd Post-M.D. Yr.	320	15,500	16,671	16,749	17,450	320	14,573	15,800	15,826	16,567
4th Post-M.D. Yr.	320	16,312	17,518	17,626	18,600	320	15,389	16,651	16,665	17,454
5th Post-M.D. Yr.	313	17,100	18,363	18,495	19,600	313	16,000	17,331	17,488	18,500
6th Post-M.D. Yr.	242	18,000	19,300	19,494	20,800	242	16,904	18,251	18,464	19,779

SOURCE: *COTH Survey of House Staff, Stipends, Benefits, and Funding, 1979.* Washington, D. C.: Association of American Medical Colleges, 1980.

Appendix 7

Average Hospital Expenditures in COTH Member Hospitals for Residents' Stipends and Fringe Benefits, 1978–79

Hospital Category	No. of Hospitals	Expenditures for Residents' Stipends and Fringe Benefits	
		Mean	Median
All responding	338	$2,431,725	$1,672,829
By geographic region			
Northeastern	141	2,301,194	1,691,225
Southern	63	2,372,245	1,642,331
Midwestern	89	2,407,509	1,599,961
Western	45	2,971,886	1,786,835
By affiliation relationship			
University-owned	54	4,071,034	4,008,355
Major affiliate	239	2,249,545	1,562,224
Limited affiliate	37	1,312,891	1,451,796
By hospital ownership			
State-owned	34	3,833,032	3,646,090
Municipally owned	32	4,305,317	3,023,000
Church-owned	33	1,897,880	1,495,596
Other, nonprofit	171	2,245,360	1,555,362
Veterans Administration	68	1,577,105	1,287,658
By bed size			
Less than 385 beds	84	1,598,636	1,112,097
385–512 beds	80	1,858,636	1,235,231
513–695 beds	89	2,323,931	1,880,367
Greater than 695 beds	85	3,907,256	3,154,487

SOURCE: *COTH Survey of House Staff, Stipends, Benefits, and Funding, 1979.* Washington, D.C.: Association of American Medical Colleges, 1980.

Appendix 8

Percentage Distribution of Funding Sources Used To Pay Hospital Costs of Residents' Stipends and Fringe Benefits, Nonfederal Hospitals, 1978–79*

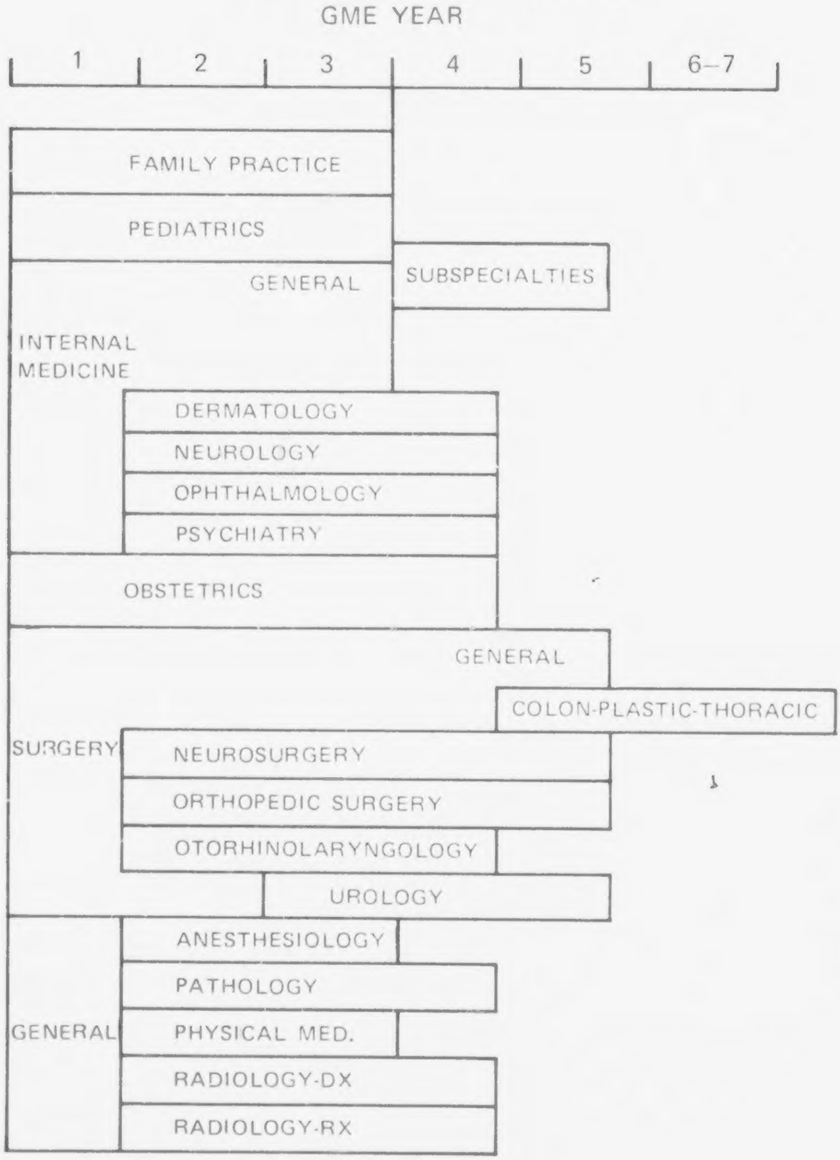
Funding Source	Source of Revenue	
	Residents	Clinical Fellows
Patient revenues and *general* operating appropriations	75.24	52.29
State appropriations *earmarked* for house staff expenses	4.77	1.80
Municipal appropriations *earmarked* for house staff expenses	6.22	0.53
Veterans Administration appropriations	2.00	5.04
Physician fee revenue	1.06	5.62
Medical school/university funds	2.66	4.62
National Institutes of Health	0.47	11.15
Federal agencies other than NIH, VA	1.04	4.11
Endowment income, foundation grants, voluntary agencies	0.15	7.06
Other	6.39	7.78
Total	100.00	100.00

* The number of responding hospitals was 270 with residents and 127 with clinical fellows.

SOURCE: *COTH Survey of House Staff, Stipends, Benefits, and Funding, 1979.* Washington, D. C.: Association of American Medical Colleges, 1980.

Appendix 9

Profile of Progression in Residency Training


GME YEAR
1
2
3
4
5
6–7
FAMILY PRACTICE
PEDIATRICS
GENERAL
SUBSPECIALTIES
INTERNAL MEDICINE
DERMATOLOGY
NEUROLOGY
OPHTHALMOLOGY
PSYCHIATRY
OBSTETRICS
GENERAL
COLON-PLASTIC-THORACIC
SURGERY
NEUROSURGERY
ORTHOPEDIC SURGERY
OTORHINOLARYNGOLOGY
UROLOGY
ANESTHESIOLOGY
PATHOLOGY
GENERAL
PHYSICAL MED.
RADIOLOGY-DX
RADIOLOGY-RX

SOURCE: The National Resident Matching Program.

The educational sequence toward specialty board certification commonly followed by U.S. graduates during residency training is shown. The "general year" shown for the support specialties may be either a flexible program or a year in a broad specialty. Over half of the graduates who enter psychiatry, anesthesiology, and pathology enter their programs directly from medical school.

Appendix 10

General and Special Certifications Offered by American Specialty Boards

Board	General Certifications	Special Certifications
Allergy and Immunology Conjoint Board of the American Boards of Internal Medicine and Pediatrics	Allergy and Immunology	None
Anesthesiology	Anesthesiology	None
Colon and Rectal Surgery	Colon and Rectal Surgery	None
Dermatology	Dermatology	Dermatopathology
Emergency Medicine Conjoint Board of American Boards of Surgery, Internal Medicine, Family Practice, Psychiatry and Neurology, Obstetrics and Gynecology, Pediatrics, and Otolaryngology; American College of Emergency Physicians; University Association for Emergency Medicine; American Medical Association Section on Emergency Medicine	Emergency Medicine	None
Family Practice	Family Practice	None
Internal Medicine	Internal Medicine	Cardiovascular Disease Endocrinology and Metabolism Gastroenterology Hematology Infectious Disease Medical Oncology Nephrology Pulmonary Disease Rheumatology
Neurological Surgery	Neurological Surgery	None
Nuclear Medicine Conjoint Board of the American Boards of Internal Medicine, Pathology, and Radiology; Society of Nuclear Medicine	Nuclear Medicine	Radioisotopic Pathology Nuclear Radiology
Obstetrics and Gynecology	Obstetrics and Gynecology	Gynecological Oncology Maternal and Fetal Medicine Reproductive Endocrinology
Ophthalmology	Ophthalmology	None
Orthopaedic Surgery	Orthopaedic Surgery	None
Otolaryngology	Otolaryngology	None
Pathology	Anatomic and Clinical Pathology Anatomic Pathology Clinical Pathology	Blood Banking Chemical Pathology Dermatopathology Forensic Pathology Hematology Medical Microbiology Neuropathology Radioisotopic Pathology

Appendix 10 (Continued)

Board	General Certifications	Special Certifications
Pediatrics	Pediatrics	Pediatric Cardiology Pediatric Endocrinology Pediatric Hematology-Oncology Pediatric Nephrology Neonatal-Perinatal Medicine
Physical Medicine and Rehabilitation	Physical Medicine and Rehabilitation	None
Plastic Surgery	Plastic Surgery	None
Preventive Medicine	Aerospace Medicine General Preventive Medicine Occupational Medicine Public Health	None
Psychiatry and Neurology	Psychiatry Neurology Neurology with Special Competence in Child Neurology Psychiatry and Neurology	Child Psychiatry
Radiology	Radiology Diagnostic Radiology Therapeutic Radiology	Nuclear Radiology
Surgery	Surgery	Pediatric Surgery
Thoracic Surgery	Thoracic Surgery	None
Urology	Urology	None

SOURCE: American Board of Medical Specialties. *Annual Report, 1978–1979.* Evanston, Illinois: American Board of Medical Specialties, 1979.

Appendix 11

Annual General Certifications by 22 American Specialty Boards, 1964–1978

Board	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1964–1973 Total	1974	1975	1976	1977	1978	1974–1978 Total
Allergy & Immunology												631	286		304		1,221
Anesthesiology	299	290	284	292	311	276	284	327	421	491	3,275	518	608	497	507	453	2,583
Colon & Rectal Surgery	14	12	8	12	13	15	32	23	27	20	176	20	31	29	31	42	153
Dermatology	91	110	94	121	99	114	172	165	151	196	1,313	197	223	271	440	275	1,406
Family Practice							1,690	1,595	1,284	1,240	5,809	1,264	1,709	2,276	3,104	4,952	13,305
Internal Medicine	745	775	657	871	1,013	989	1,191	1,195	4,378	3,298	15,112	3,046	3,324	3,973	4,207	4,566	19,116
Neurological Surgery	56	72	91	72	77	99	82	92	107	101	849	66	82	179	104	99	530
Nuclear Medicine									940	414	1,354	317	397	699	59	52	1,524
Obstetrics/Gynecology	375	416	626	1,255	736	780	625	620	628	706	6,767	734	768	908	829	421	3,660
Ophthalmology	237	267	266	291	290	335	382	383	384	425	3,260	426	502	749	567	517	2,761
Orthopaedic Surgery	253	312	282	364	555	433	418	504	801	541	4,463	637	524	524	719	659	3,083
Otolaryngology	119	81	149	139	157	166	239	332	311	319	2,012	275	282	286	284	303	1,430
Pathology	471	442	431	354	437	431	337	530	554	497	4,484	553	548	607	709	757	3,174
Pediatrics	624	624	675	651	761	793	797	795	762	886	7,368	971	1,195	1,119	1,110	1,157	5,552
Physical Medicine & Rehabilitation	30	45	53	48	53	61	71	63	54	71	549	66	65	68	124	114	437
Plastic Surgery	53	56	48	57	52	53	82	89	92	129	711	144	132	167	157	145	745
Preventive Medicine	93	62	80	99	127	108	124	128	107	105	1,033	115	105	90	103	86	499
Psychiatry and Neurology	348	311	474	364	358	613	742	507	653	554	4,864	720	856	1,399	1,500	1,425	5,900
Radiology	464	403	442	469	463	540	583	724	822	917	5,827	1,389	1,193	983	952	853	5,370
Surgery	753	735	745	721	753	700	777	873	826	799	7,682	806	839	790	954	1,151	4,540
Thoracic Surgery	137	133	173	150	169	130	146	160	200		1,398	158	141	160	146	154	759
Urology	136	139	149	144	179	156	182	206	245	230	1,766	215	437	493	402	385	1,932
Total	5,298	5,285	5,727	6,414	6,603	6,792	8,956	9,311	13,747	11,939	80,072	13,288	14,247	16,267	17,312	18,566	79,680
			29,327					50,745									

SOURCE: American Board of Medical Specialties. *Annual Report, 1978–1979.* Evanston, Illinois: American Board of Medical Specialties, 1979.

Appendix 12

Special Certificates Awarded in 29 Areas, 1974–1978

Area	1974	1975	1976	1977	1978
Dermatology					
Dermatopathology	98	117	48	57	60
Internal Medicine					
Cardiovascular Disease	322	1,052	21	1,015	—
Endocrinology & Metabolism	—	293	—	323	—
Gastroenterology	—	450	—	557	—
Hematology	481	—	345	—	338
Infectious Disease	171	—	181	—	236
Medical Oncology	—	375	—	508	—
Nephrology	389	—	339	—	392
Pulmonary Disease	363	—	368	—	556
Rheumatology	240	—	189	—	263
Obstetrics and Gynecology					
Gynecologic Oncology	66	13	23	28	—
Maternal and Fetal Medicine	16	23	29	37	—
Reproductive Endocrinology	22	15	13	14	—
Pathology					
Blood Banking	49	28	35	28	40
Chemical Pathology	3	3	6	10	8
Dermatopathology	60	27	46	45	51
Forensic Pathology	24	22	36	22	34
Hematology	13	14	45	27	47
Medical Microbiology	1	8	9	13	14
Neuropathology	20	29	20	20	15
Radioisotopic Pathology	149	42	27	22	14
Pediatrics					
Pediatric Cardiology	1	34	—	57	22
Pediatric Endocrinology	—	—	—	—	218
Pediatric Hematology-Oncology	221	—	86	—	134
Pediatric Nephrology	120	—	61	—	—
Neonatal-Perinatal Medicine	—	335	—	236	—
Psychiatry and Neurology					
Child Psychiatry	52	50	76	96	109
Radiology					
Nuclear Medicine	93	21	50	46	89
Surgery					
Pediatric Surgery	—	231	70	24	17

SOURCE: American Board of Medical Specialties. *Annual Report, 1978-1979.* Evanston, Illinois: American Board of Medical Specialties, 1979.

Appendix 13

Accreditation Pre-Site Visit Survey Forms Used by 16 Residency Review Committees

Evaluating programs for accreditation requires that the accrediting bodies have information concerning the factors that determine or influence the quality of the educational program in the institution. The depth and breadth of information requested by the residency review committees in the pre-site visit survey forms, which program directors are required to fill out to supply relevant information about the program being evaluated, can provide insight into the fund of knowledge residency review committees have available when they approve or disapprove a program.

To determine the scope of information now being sought by residency review committees, pre-survey forms used by 16 residency review committees were analyzed by the Association of American Medical Colleges' staff in the spring of 1979. The analysis focused on information provided about the institution, the program and its relationship with other residencies in the institution, and the educational process. Findings were summarized according to institutional information requested, administrative program information requested, and educational information requested.

These tables were developed on the basis of the pre-site visit data collection forms obtained from the Liaison Committee on Graduate Medical Education in 1977. Since these forms were undated, some residency review committees may currently be using evaluation forms that were subsequently revised. Members of the medical education community familiar with evaluation procedures employed by residency review committees may find discrepancies between criteria stated in the Special Requirements for the specialty and the data that are required on the site visit evaluation forms. The discrepancy between the Special Requirements and the pre-site visit evaluation forms suggests that information residency review committees may find relevant in assessing the quality of a graduate program is not always obtained through the present system of surveying residency programs.

Institutional Information

Most residency review committee pre-survey forms asked for information concerning the total number of beds in the institution and the program's specialty service. Six requested data concerning other programs in the hospital.

Although all residency review committees elicit data on available laboratory facilities, some notable omissions were evident. For example, the Residency Review Committee in Internal Medicine did not ask about cardiovascular catheter or pulmonary function laboratories, nor did the Residency Review Committee in Neurology show an interest in the clinical laboratory.

The only residency review committees that sought information about ambulatory services other than those in the specialty being evaluated were family practice and radiology. Family practice was the only residency review committee that requested descriptions of special units such as the intensive care unit and the cardiac care unit. Six residency review committees were interested in information about the emergency room.

Administrative Program Information

All specialties obtained considerable information on the number of teaching staff, residents, and positions filled in their own programs. Nine of the 16 sought information about undergraduate medical students assigned to the service.

The paucity of questions concerning other programs in the institution demonstrates the narrow focus of each residency review committee in evaluating its own programs. Seven of the residency review committees asked for no information about other programs. Four of the survey forms asked whether there were other graduate medical education programs without requesting names of the specialties. On only two survey forms was the accreditation status of related programs noted. Information about the teaching staff of other programs was listed in only one form, and another required that the program director know whether or not medical students were placed on related services. Five residency review committees addressed the area of conjoint activities with at least one other training program in the institution. The identity of the program director for related residency programs in the institution was of interest to fewer than one-third of the residency review committees. Six requested the name of the director of medical education in the institution.

Educational Program Information

Seven of the 16 forms required that the program director list qualifications for residents to be selected, but none asked for a description of procedures used to select residents. A description of educational conferences was required on three out of four forms. The same number wanted an outline or diagram of resident rotations for each level of training. Five residency review committees included items on the content or objectives for each level of training, and eight desired a description of rotations outside the department.

On three forms program directors were asked to list departmental goals for residency training, and four of the residency review committees sought a description of the program's contributions to other residents outside the department.

Evaluation is an integral part of the educational process, but this analysis of the pre-site visit forms suggests that residency review committees in general show little interest in the procedures used to evaluate resident progress or methods of evaluating the program's effectiveness. Four site visit forms asked about resident evaluation procedures, only one required information on evaluating faculty, and two looked into information on internal program evaluation. Seven residency review committees requested that program directors include a description of resident progression of responsibility.

INSTITUTIONAL INFORMATION REQUESTED BY 16 RESIDENCY REVIEW COMMITTEES ON PRE-SITE VISIT ACCREDITATION FORMS

Institutional Information Requested	Residency Review Committee Forms															
	Allergy & Immunology	Anesthesiology	Dermatology	Family Practice	Internal Medicine	Neurology	Obstetrics & Gynecology	Ophthalmology	Otolaryngology	Pathology	Pediatrics	Pediatric Surgery	Plastic Surgery	Psychiatry	Radiology	Sur
Total Number of Beds in Hospital		X	X	X	X	X	X		X	X		X	X	X	X	X
Average Daily Occupancy		X	X	X	X			X				X				
Number of Beds in Hospital for Each Service																
Allergy & Immunology	X															
Anesthesiology																
Dermatology			X													
Family Practice				X												
Internal Medicine	X			X	X					X	X					
Neurology					X	X										
Obstetrics & Gynecology				X			X			X						
Ophthalmology								X								
Otolaryngology									X							
Pathology																
Pediatrics	X			X	X					X	X				X	
Pediatric Surgery																
Plastic Surgery													X			
Psychiatry				X	X	X								X		
Radiology																
Surgery				X						X	X					X

Ambulatory Facilities																
Allergy & Immunology	X															
Anesthesiology																
Dermatology			X													
Family Practice				X												
Internal Medicine					X											
Neurology						X										
Obstetrics & Gynecology				X			X									
Ophthalmology				X												
Otolaryngology																
Pathology																
Pediatrics				X							X				X	
Pediatric Surgery																
Plastic Surgery													X			
Psychiatry				X										X		
Radiology				X												
Surgery				X												X
Laboratory Facilities			X						X	X						
Radiology		X	X	X	X	X	X	X	X		X	X	X		X	X
Clinical	X		X	X	X		X	X			X	X	X	X		
Cardiovascular Catheter																
Electrocardiogram				X							X					
Electroencephalogram						X								X		
Electromyogram						X								X		
Pathology		X	X	X	X	X	X	X	X	X	X	X	X	X		X
Pulmonary Function	X															
Autopsy Rate		X	X	X	X	X	X		X	X	X	X	X		X	X
Emergency Room																
Number of Visits	X			X	X						X		X			X
Special Units																
Intensive Care				X												
Coronary Care				X												
Burn																

ADMINISTRATIVE PROGRAM INFORMATION REQUESTED BY 16 RESIDENCY REVIEW COMMITTEES ON PRE-SITE VISIT ACCREDITATION FORMS

	Residency Review Committee Forms															
Administrative Program Information	Allergy & Immunology	Anesthesiology	Dermatology	Family Practice	Internal Medicine	Neurology	Obstetrics & Gynecology	Ophthalmology	Otolaryngology	Pathology	Pediatrics	Pediatric Surgery	Plastic Surgery	Psychiatry	Radiology	Surgery
Name of Program Director	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Full-time/Part-time		X	X		X			X	X		X					
Number of Teaching Staff	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Full-time/Part-time	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Resident Positions Offered at Each Level	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Resident Positions Filled at Each Level	X		X	X	X	X	X	X	X		X	X	X		X	X
Medical Students Assigned to the Service	X		X		X		X		X			X	X		X	X
Current Accreditation Status	X		X	X	X	X	X	X	X	X	X	X	X	X		X
Date of Last Review (month and year)																
Other Graduate Education Programs in the Institution																
Number				X			X			X				X		
Accreditation Status	X			X												
Names of Program Directors	X			X	X	X								X		
Number of Teaching Staff											X					
Description of Joint Activities			X	X		X	X				X					
Medical Students Assigned to the Service														X		
Name of Director of Medical Education	X		X	X	X						X	X				

EDUCATIONAL PROGRAM INFORMATION REQUESTED BY 16 RESIDENCY REVIEW COMMITTEES ON PRE-SITE VISIT ACCREDITATION FORMS

Educational Program Information	Residency Review Committee Forms															
	Allergy & Immunology	Anesthesiology	Dermatology	Family Practice	Internal Medicine	Neurology	Obstetrics & Gynecology	Ophthalmology	Otolaryngology	Pathology	Pediatrics	Pediatric Surgery	Plastic Surgery	Psychiatry	Radiology	Surgery
Qualifications for Residents to be Selected			X			X		X	X			X		X		X
Description of Selection Procedures																
Description of Educational Conferences	X	X	X	X	X	X	X				X	X	X		X	X
Outline/Diagram of Resident Rotations for Each Level of Training	X		X	X	X	X	X	X	X		X		X		X	X
Description of Content of Rotations for Each Level of Training		X		X		X			X					X		
Identification of Rotations Outside Department	X	X		X		X	X		X				X	X		
Description of Procedures to Evaluate Residents' Skills and Knowledge	X	X		X							X					
Description of Procedures to Evaluate Faculty Teaching				X												
Description of Procedures to Evaluate Training Program	X			X												
Description of the Progression of Resident Responsibility	X		X		X			X	X		X					X
Description of Departmental Goals				X				X			X					
Description of the Program's Contribution to Residents from Outside the Department		X				X							X	X		

Appendix 14

AAMC Invitational Conference on Graduate Medical Education, Washington, D.C., September 29-30, 1980

Roster of Participants*

Abell, M. R., M.D., Ph.D.
Executive director, American Board of Pathology

Adkins, Warren Y., Jr.
Professor and chairman, Department of Otorhinolaryngology, Medical University of South Carolina College of Medicine; representative, Association of Academic Departments of Otolaryngology

Affeldt, John, M.D.
President, Joint Commission on Accreditation of Hospitals

Anderson, Martha R., Ph.D.
Staff associate, Association of American Medical Colleges; and member, project staff, Task Force on Graduate Medical Education, Association of American Medical Colleges

Ankeney, Jay L., M.D.
Professor and acting chairman, Division of Thoracic Surgery, Case Western Reserve University School of Medicine; and president, Society of Thoracic Surgeons

Banks, Henry H., M.D.
Professor and chairman, Department of Orthopedic Surgery, and associate dean for hospital affairs, Tufts University School of Medicine; and executive director, American Board of Orthopedic Surgery

Barnett, B. Lewis, Jr., M.D.
Professor and chairman, Department of Family Practice, University of Virginia School of Medicine; and President, American Board of Family Practice

Bartlett, James W., M.D.
Medical director, Strong Memorial Hospital, Rochester, N.Y.; and representative, American Hospital Association

Bellanti, Joseph A., M.D.
Director, International Center for Interdisciplinary Studies of Immunology, and professor of pediatrics and microbiology, Georgetown University Medical Center; and representative, American Board of Allergy and Immunology

Bennett, William E., Ph.D.
Division of Medicine, Bureau of Health Manpower

Bentley, James, Ph.D.
Associate director, Department of Teaching Hospitals, Association of American Medical Colleges

Bickel, Janet
Staff associate, Division of Student Programs, Association of American Medical Colleges

Black, Ross R., II, M.D.
Assistant director, Division of Education, American Academy of Family Physicians; and observer

Bleich, Maxine E.
Program director, Josiah Macy, Jr. Foundation

Boerner, Robert J.
Director, Division of Student Programs, Association of American Medical Colleges

Bruce, Harry W., Jr., D.D.S.
Executive director, American Association of Dental Schools; and observer

Bryan, Franklin A., M.D.
Director of medical education and associate professor of postgraduate medicine, Indiana-Purdue University of Fort Wayne; and representative, Association for Hospital Medical Education

Burg, Fredric D., M.D.
Associate dean for academic program, University of Pennsylvania Medical Center; and member, Working Group on Quality to the Association of American Medical Colleges Task Force on Graduate Medical Education

Butler, Peter
Senior staff associate, Department of Teaching Hospitals, Association of American Medical Colleges

Castro, Alejandro F., M.D.
Representative, American Board of Colon and Rectal Surgery; representative, Residency Review Committee for Colon and Rectal Surgery; and representative, American Society of Colon and Rectal Surgeons

Clawson, D. Kay, M.D.
Dean, University of Kentucky College of Medicine; member, Task Force on Graduate Medical Education, Association of American Medical Colleges; and chairman, Working Group on Transition to the Task Force

Clemente, Carmine D., Ph.D.
Director, Brain Research Institute, Center for the Health Sciences, University of California, Los Angeles; and chairman, Council of Academic Societies, Association of American Medical Colleges

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* This list includes only those who actually attended the conference and their titles as they were in the fall of 1980.

Cohen, B. Stanley, M.D.
Representative, American Board of Physical Medicine and Rehabilitation

Coleman, Gloria M.
Executive director, Association for Hospital Medical Education; and observer

Collins, F. William, Jr., M.D.
Harvey and Kate Cushing Professor of Neurosurgery, Yale University School of Medicine; and chairman, American Board of Neurological Surgery

Connar, Richard G., M.D.
Member, Liaison Committee on Graduate Medical Education

Cooper, John A. D., M.D., Ph.D.
President, Association of American Medical Colleges

Cruft, George E., M.D.
Associate director, American Board of Surgery

De Lisa, Joel A., M.D.
Representative, Association of Academic Physiatrists

Douglas, Gordon W., M.D.
Professor and chairman, Department of Obstetrics/Gynecology, New York University; member, Task Force on Graduate Medical Education, Association of American Medical Colleges; and chairman, Working Group on National Standards Formulation and Accreditation to the Task Force

Dubach, Ulrich D., M.D.
Professor of internal medicine, Medizinische Universitats-Poliklinik, Kantonsspital Basel, Switzerland

Earley, Laurence E., M.D.
Frank Wister Thomas Professor of Medicine and chairman, Department of Medicine, University of Pennsylvania School of Medicine; and representative, Association of Professors of Medicine

Egan, Richard L., M.D.
Secretary, Council on Medical Education, American Medical Association

Elliott, Ray A., Jr., M.D.
Chairman, Residency Review Committee for Plastic Surgery; and representative, American Board of Plastic Surgery, Inc.

Ellison, Robert G., M.D.
Charbonnier Professor, Department of Surgery, and chief, Department of Surgery (Thoracic), Medical College of Georgia; chairman, American Board of Thoracic Surgery, Inc.; representative, Residency Review Committee for Thoracic Surgery; and representative, Thoracic Surgery Directors Association

Eng, Mary
Administrative resident, Department of Teaching Hospitals, Association of American Medical Colleges

Erdmann, James B., Ph.D.
Director, Division of Educational Measurement and Research, Association of American Medical Colleges

Etheredge, Lynn
Chief, Health Branch, Office of Management and Budget

Fallon, Harold J., M.D.
Professor and chairman, Department of Medicine, Medical College of Virginia; and representative, American Board of Internal Medicine

Faverman, Gerald A., Ph.D.
Representative, American Osteopathic Association

Fentress, Charles
Director of public relations, Association of American Medical Colleges

Fink, Paul J., M.D.
Professor and chairman, Department of Psychiatry and Human Behavior, Jefferson Medical College of Thomas Jefferson University; and president-elect, American Association of Chairmen of Departments of Psychiatry

Fisher, Alfred
Executive director, National Medical Association

Fitz, Reginald H., M.D.
Vice president, The Commonwealth Fund

Foote, Sandra, M.D.
Clinical associate, Laboratory for Tumor Cell Biology, National Cancer Institute, National Institutes of Health; and member, Task Force on Graduate Medical Education, Association of American Medical Colleges

Foreman, Spencer, M.D.
President, Sinai Hospital of Baltimore; and member, Task Force on Graduate Medical Education, Association of American Medical Colleges

Freymann, John G., M.D.
President, National Fund for Medical Education

Gehringer, Gerald R., M.D.
Professor and chairman, Department of Family Medicine, Louisiana State University School of Medicine in New Orleans; and chairman, Commission on Education, American Academy of Family Physicians

Gienapp, John C., Ph.D.
Acting director, Department of Graduate Medical Education, American Medical Association

Glenn, James F., M.D.
Dean, Emory University School of Medicine; and chairman, Residency Review Committee for Urology

Goodwin, Willard E., M.D.
Professor of surgery/urology, UCLA School of Medicine; and president, American Board of Urology, Inc.

Gordon, Henry, M.D.
Medical officer, Office of Administration, Health

Resources Administration

Graettinger, John S., M.D.
Executive vice president, National Resident Matching Program; associate dean for graduate medical education, Rush-Presbyterian-St. Luke's Medical Center; and special staff consultant, Task Force on Graduate Medical Education, Association of American Medical Colleges

Green, Joseph B., M.D.
Professor and chairman, Department of Neurology, Medical College of Georgia; and representative, American Academy of Neurology

Gronvall, John A., M.D.
Dean, University of Michigan Medical School; and representative, Council of Deans, Association of American Medical Colleges

Gutmann, Cheryl M., M.D., M.Sc.
Resident in psychiatry, Rush Presbyterian-St. Luke's Medical Center; and member, Task Force on Graduate Medical Education, Association of American Medical Colleges

Hamilton, William K., M.D.
Professor and chairman, Department of Anesthesia, University of California, San Francisco, School of Medicine; representative, American Board of Anesthesiology; and representative, Residency Review Committee for Anesthesiology

Hartman, J. Ted, M.D.
Professor and chairperson, Department of Orthopaedic Surgery, Texas Tech University Medical School; and president, Association of Orthopaedic Chairmen

Hastings, Alicia E., M.D.
Professor and chairman, Department of Physical Medicine and Rehabilitation, Howard University Center for the Health Sciences; and representative, American Academy of Physical Medicine and Rehabilitation

Heck, Charles V., M.D.
Executive director, American Academy of Orthopaedic Surgeons

Holden, William D., M.D.
Professor of surgery, University Hospitals, Cleveland, Ohio; and chairman, National Board of Medical Examiners

Hosea, Timothy, M.D.
PGY-3 resident in orthopedic surgery, Massachusetts General Hospital; and resident member, Liaison Committee on Graduate Medical Education

Hudson, James I., M.D.
Director, Department of Health Services, Association of American Medical Colleges

Huet, Rocio
National president, American Medical Student Association

Huffman, B. Leslie, M.D.
Representative, Council of Medical Specialty Societies

Irving, Thomas H., M.D.
Professor and chairman, Department of Anesthesia, Bowman Gray School of Medicine of Wake Forest University; representative, Society of Academic Anesthesia Chairmen, Inc.

Jacobson, Harold G., M.D.
Chairman, Department of Radiology, Montefiore Hospital Medical Center; and president, American Board of Radiology

Jaeger, Beth
Staff assistant, Association of American Medical Colleges

Janiak, Bruce D., M.D.
Director, Department of Emergency Medicine, Toledo Hospital; and chairman, Graduate/Undergraduate Education Committee, American College of Emergency Physicians

Jenkins, M. T., M.D.
Margaret Milan McDermott Professor and chairman, Department of Anesthesiology, University of Texas Southwestern Medical School at Dallas; representative, American Society of Anesthesiologists; and member, Liaison Committee on Graduate Medical Education

Jennings, F. Lamont, M.D.
Professor and chairman, Department of Pathology, Wright State University School of Medicine; and commissioner on education, College of American Pathologists

Johns, T. R., II, M.D.
Alumni Professor of Neurology and chairman, Department of Neurology, University of Virginia Medical Center; and representative, American Neurological Association

Jolly, Paul, Ph.D.
Director, Division of Operational Studies; and deputy director, Department of Planning and Policy Development, Association of American Medical Colleges

Jones, Jan
Task Force coordinator (Committee on Medical Education), American Medical Student Association

Kahn, Charles, III
Program director, Office of Financial Management Education, Association of University Programs in Health Administration; and observer

Kearns, Thomas P., M.D.
Department of Ophthalmology, Mayo Clinic; representative, American Board of Ophthalmology; and representative, Residency Review Committee in Ophthalmology

Kennedy, Thomas J., Jr., M.D.
Director, Department of Planning and Policy Development, Association of American Medical Colleges

Kessler, Irving I., M.D.
Professor and chairman, Department of Epidemiology and Preventive Medicine, University of Maryland School of Medicine; and representative, Association of Teachers of Preventive Medicine

Keyes, Joseph, J. D.
Staff counsel and director, Division of Institutional Studies, Association of American Medical Colleges

Kilduff, Chris J., M.D.
Assistant dean of medicine (postgraduate clinical education) and professor of anesthesia, University of Saskatchewan College of Medicine; and representative, Association of Canadian Medical Colleges

Knab, Douglas R., M.D.
Captain, Medical Corps, U.S. Navy; professor and chairman, Department of Obstetrics & Gynecology, Uniformed Services University School of Medicine; and representative, Association of Professors of Obstetrics and Gynecology

Knapp, Richard M., Ph.D.
Director, Department of Teaching Hospitals, Association of American Medical Colleges

Kohut, Robert I., M.D.
Professor of surgery (otolaryngology), and head, Section of Otolaryngology, Bowman Gray School of Medicine of Wake Forest University; representative, American Board of Otolaryngology; and representative, American Academy of Otolaryngology

Kotcher, Peter, M.D.
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